

# **Appendix A:**

## **Cultural Landscape Report Update**





Wilson's Creek National Battlefield  
Cultural Landscape Report Update – September 2017

Wilson's Creek National Battlefield  
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**DRAFT**  
**TO ACCOMPANY ENVIRONMENTAL ASSESSMENT**

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**September 2017**

# Wilson's Creek National Battlefield

## Cultural Landscape Report Update

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Figure 1. Entrance, Wilson's Creek National Battlefield. (Source: LSHLA)

# Introduction

## Background

Wilson's Creek National Battlefield (fig. 1) is a unit of the National Park System that protects the historic landscape associated with the August 10, 1861, Civil War Battle of Wilson's Creek. The Battle of Wilson's Creek was the war's second major battle, following the First Battle of Bull Run on July 21, 1861, in Virginia, and the first in the Trans-Mississippi West. The battle is notable as the location where the Union army lost its first general—Nathaniel Lyon—and for its impact on Missouri's status as a border state.

Wilson's Creek National Battlefield Park was established by Congress on April 22, 1960, to preserve and commemorate the Battle of Wilson's Creek.<sup>1</sup> In 2007, following acquisition of an important collection of Civil War artifacts, the park's purpose was updated in a General Management Plan Amendment to address this change. The park's current purpose is to: "commemorate the Battle of Wilson's Creek, preserve the associated battlefield, and interpret the battle within the context of the Civil War in the Trans-Mississippi West."<sup>2</sup>

Federal protection of the battlefield in 1960 followed private efforts conducted by a group of local businessmen and community leaders to secure the key terrain associated with one of the most important areas of combat—so-called Bloody Hill—and to commemorate the events of the battle. The group formed the Wilson's Creek Battlefield Foundation in 1950; through successful fund-raising efforts, the Foundation was able to acquire 60 acres of Bloody Hill in 1951. The land acquired by the Foundation included a monument, erected in 1928, marking the site where Union Gen. Nathaniel Lyon was killed during the battle. After Congress established Wilson's Creek National Battlefield Park, the Foundation transferred ownership of the land to the federal government. When land acquisition of the area targeted for inclusion in the park was completed, Wilson's Creek National Battlefield contained 1,749.49 acres of land, considered to be essential to

1. National Park Service, *Wilson's Creek National Battlefield General Management Plan Amendment/Environmental Assessment/Assessment of Effect for the Civil War Museum and Addition Lands* (July 2007), i. Public Law 86-434 established the park as Wilson's Creek National Battlefield Park. The park was re-designated Wilson's Creek National Battlefield on December 16, 1970.
2. National Park Service, *General Management Plan Amendment*, 4.

1 understanding the events of the battle. Since 1960, the Wilson's Creek Battlefield Foundation has remained a  
2 partner of the federal government in protecting the battlefield, and is recognized as one of the oldest private  
3 sector support groups of the National Park Service.<sup>3</sup>

4 The park constitutes a significant cultural landscape that is listed in the National Register of Historic Places  
5 for the events associated with the Battle of Wilson's Creek. The management of cultural landscapes like  
6 Wilson's Creek National Battlefield is often considered within the framework of a planning document  
7 referred to as a cultural landscape report (CLR). In the late 1990s, the National Park Service engaged the  
8 services of a consultant to prepare a CLR for Wilson's Creek National Battlefield. The CLR was completed in  
9 2004 by John Milner Associates, Inc. (JMA), of Charlottesville, Virginia. The CLR considered the historical  
10 evolution, existing composition, and National Register of Historic Places significance and integrity of  
11 Wilson's Creek National Battlefield. Using the historic and existing conditions documentation and  
12 assessment of the historic battlefield landscape as a foundation, JMA also prepared a treatment plan to guide  
13 long-term management of the historic battlefield landscape. The treatment plan addressed park objectives  
14 involving resource protection, management, and interpretation. Since 2004, park personnel have worked to  
15 implement the recommendations for the historic landscape included in the CLR treatment plan, employing a  
16 Section 106 compliance process for each individual effort. However, in order to efficiently address the  
17 remaining recommendations of the treatment plan, in 2016 the National Park Service determined the need to  
18 prepare an Environmental Assessment (EA) for outstanding tasks.

19 For continuity, the National Park Service engaged a team of consultants to prepare the EA led by CHG, the  
20 firm that acquired JMA in 2014. The team also included Liz Sargent of Liz Sargent HLA, who served as one of  
21 the primary authors of the 2004 CLR while employed with JMA.

22 This CLR Update was prepared in order to understand which aspects of the 2004 CLR treatment plan have  
23 been implemented, and which need to be assessed in the EA. The chapters that follow are intended to record  
24 the changes that have occurred within the park since 2004, helping to establish a baseline for a "No Action"  
25 alternative included in the EA. The CLR Update also records the National Park Service's evolving  
26 management goals and objectives for the property in order to address any modifications that are needed to  
27 the original treatment plan.

## 28 **Statement of Work and Methodology**

29 The statement of work provided to the CHG team by the National Park Service to prepare an EA for the  
30 Wilson's Creek National Battlefield CLR, which led to preparation of this CLR Update, included the  
31 following statement of purpose:

32 This project involves the development of an Environmental Assessment (EA) for the purpose  
33 of satisfying the compliance requirements for the implementation of the Wilson's Creek  
34 National Battlefield Cultural Landscape Report (2004)(CLR). The purpose for preparing the  
35 EA is to identify and disclose the potential effects of a reasonable range of alternatives  
36 developed to address the implementation actions in the report including but not limited to  
37 vegetation treatments, orchard restoration, open fields management, trail system layout, deer  
38 management, viewshed management and visitor services like interpretive waysides.

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3. Wilson's Creek National Battlefield Foundation website, available at <http://wilsonscreek.com/about> (accessed April 9, 2017).

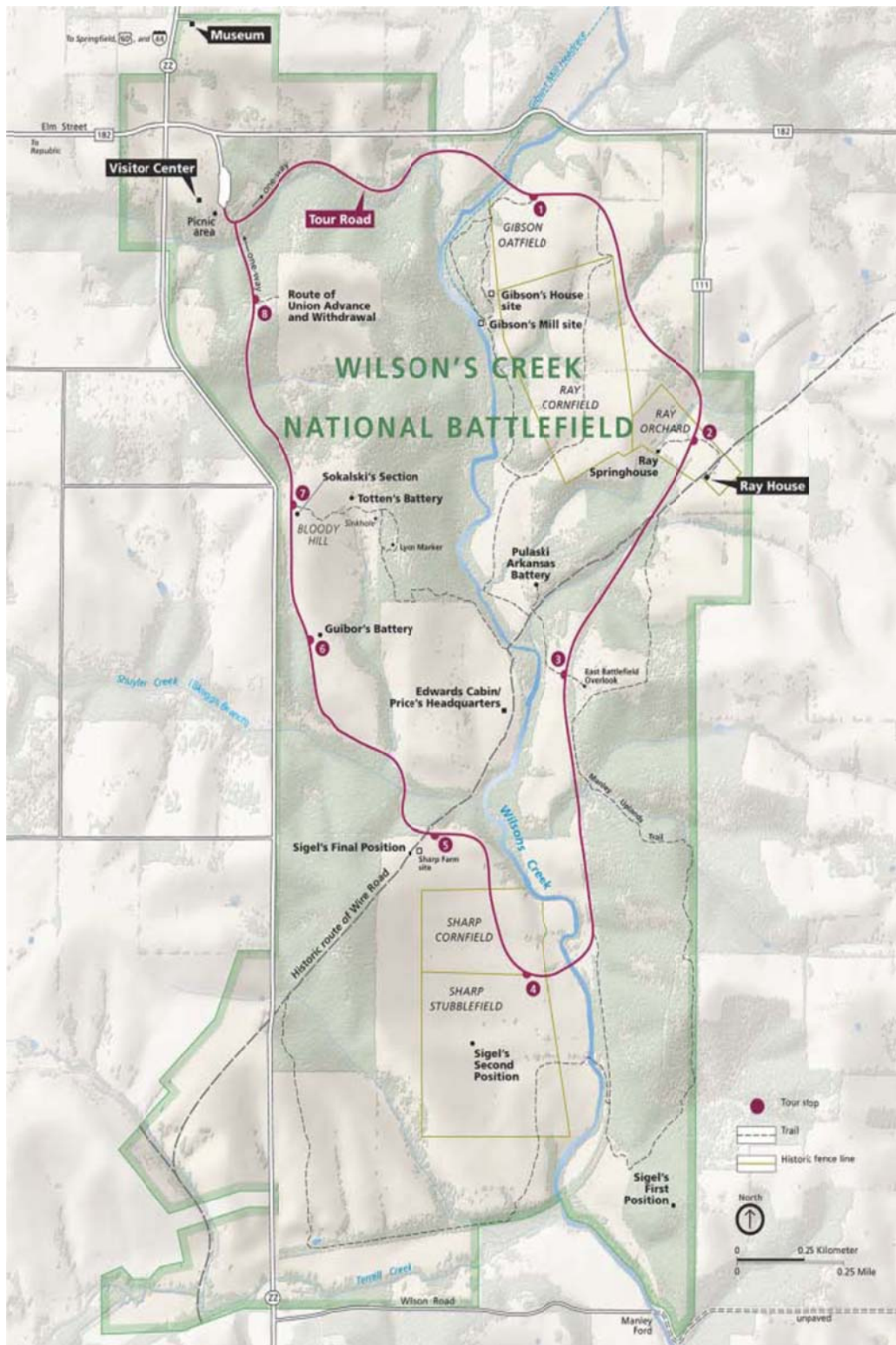
This project consists of executing National Environmental Policy Act (NEPA) compliance, in the form of an EA, for treatment recommendations found in the 2004 CLR. In September of 2004 Cultural Landscape treatment recommendations and guidelines were prepared to provide Wilson's Creek NB with a vision for the protection of the park's cultural landscape in order to sustain long-term management and interpretation. The recommendations were created over a five year period of time and are a synthesis of work undertaken by John Milner Associates, Inc. and their sub-contractors. Although the CLR was not intended to duplicate the work of a Long-Range Interpretive Plan, the connection between management of the park's cultural, natural, and historic resources and interpretation became a focus of the treatment recommendations, particularly as they addressed the objectives of the GMP's preferred management alternative.<sup>4</sup>

## Study Area

Wilson's Creek National Battlefield is located at 6424 West Farm Road 182 near the town of Republic, Missouri. The park extends over 2,029 acres, and spans the boundary between Christian and Greene counties. Farm Road 182 edges and passes through a portion of the park along the northern boundary. Farm Road 111 forms a portion of the park's eastern boundary, while Wilson Road edges part of the park's southern boundary. Missouri Highway ZZ edges and passes through portions of the park along its western boundary (map 1a).

Since 2004, the park has grown by approximately 280 acres. Land acquired for inclusion in the park edged the original park to the northwest, southwest, and southeast (map 1b). Because some of the land acquired after 2004 fell outside of the legislated and authorized boundary of the park, it could not be added until U.S. Congress passed legislation authorizing a boundary expansion. The legislation was passed in 2004 following completion of the CLR.<sup>5</sup>

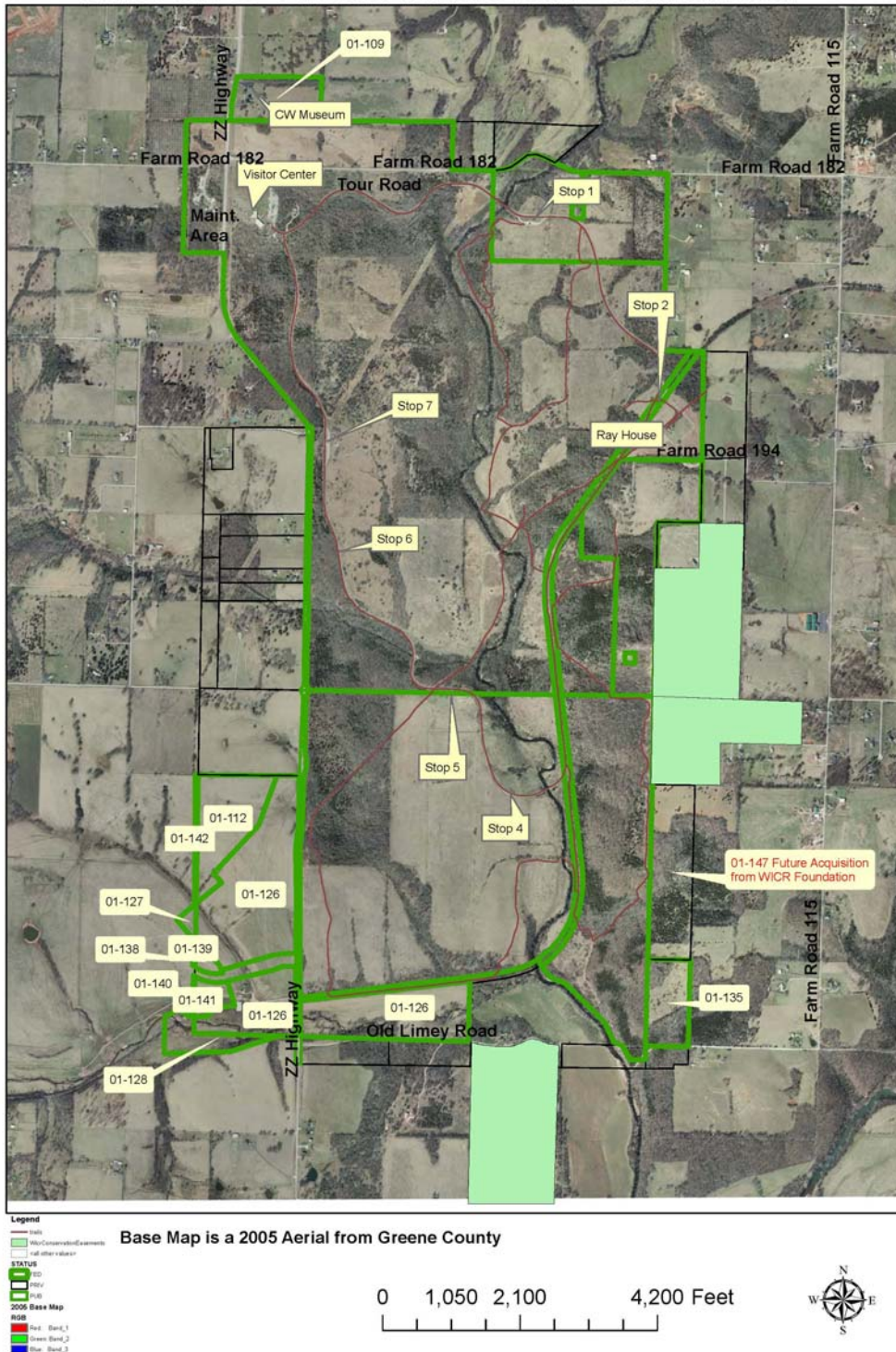
- 
4. National Park Service, Midwest Regional Office, "Statement of Work" Wilson's Creek National Battlefield Environmental Assessment (July 2016), 1.
  5. Wilson's Creek National Battlefield Boundary Adjustment Act of 2004. Public Law 108-394, October 30, 2004.



Map 1a. Unigrid map of Wilson's Creek National Battlefield, illustrating several of the parcels acquired since 2004. Additional parcels have been added to the park since this unigrid map was prepared. (Source: NPS)



## Land Tracts Purchased Since 2004 Wilson's Creek National Battlefield



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2 Map 1b. Map of parcels added to the park since 2004. (Source: NPS)



Figure 2. View of a cannon positioned to interpret the Battle of Wilson's Creek. (Source: LSHLA)

## Summary of Findings

Several changes of note have been made to the physical landscape of Wilson's Creek National Battlefield since 2004. In addition to land acquisition, these changes have included the establishment of features designed to enhance visitor access and interpretation based on the 2004 CLR treatment plan. Several of the land management strategies recommended in the CLR have also been implemented. These changes are documented in the chapters that follow in this CLR Update. Also documented are current park management goals and objectives, the studies and reports relating to historic and natural resources prepared since 2004, current park planning initiatives, and changes that have occurred in association with the park's setting.

Several of the updated management goals and objectives have resulted in modifications to the CLR treatment plan. One of the most important is the need to address deer management. Very high populations of deer have led to concerns for visitor safety and the ability of the park to implement many of the remaining treatment plan recommendations related to vegetation.

The CLR Update has specifically considered the following conditions in order to guide development of alternatives considered by the EA:

- Since 2004, the park has expanded by 280 acres to a size of 2,029 acres. An additional 172 acres of battlefield land has been placed under conservation easement since 2004. Much of the recently acquired land was located outside of the legislated authorized boundary established in 1960. In order for this land to be added to the park, Congress authorized a boundary expansion in 2004. The CLR Update includes documentation of the land that has been added since 2004, and applies the treatment principles espoused in the CLR for inclusion in the EA. The CLR Update also considers the guidance afforded in the park's 2007 General Management Plan Amendment in addressing treatment of these parcels.
- One of the parcels acquired by the park is located north of Farm Road 182 near the entrance. The property formerly served as the General Sweeny Museum and housed a renowned private collection of Civil War artifacts. The artifacts are now included in the park's collection, while the property is

being used for park storage and office space. An approach to managing this property needs to be articulated.

- Treatment recommendations that have been implemented include the planting of an orchard exhibit at the Ray House; construction of period appropriate fences around the Ray and Sharp cornfields; establishment of crop exhibits; rehabilitation of the Edwards Cabin/Price's Headquarters site to interpret an important element of the battlefield; repaving of the tour road to diminish its visual impact within the landscape; protection of the glade landscape from visitor access at Bloody Hill; improvement of the picnic area; and enhanced vegetation management to improve the health of native plant communities and water resources.
- Expanding on the guidance afforded in the CLR treatment plan, the park has enhanced interpretation of the Bloody Hill landscape through the addition of several new wayside and cannon (fig. 2) exhibits, parking spaces, trail alignments, and contemplative features.
- The park has increased the use of prescribed fire in the management of vegetation based on an updated fire management plan (2004). Prescribed fire is an important tool to implement several of the treatment plan recommendations included in the 2004CLR involving the control of invasive species, undesirable tree species, and the promotion of native warm-season grass and forb fields and savanna communities. Fire was also indicated in the CLR as one of the tools that might be used to reestablish historic views within the landscape that will help visitors better understand battle events.
- The Visitor Center has been expanded to include a larger library, multi-purpose room, bathroom, offices, and lunch room, and houses exhibits that have benefitted from the inclusion of artifacts from the former General Sweeny Museum.
- An update to the Civil War Sites Advisory Commission *Report on the Nation's Civil War Battlefields* was prepared for Missouri in 2011. Based on consideration of new scholarship and assessment of the battlefield, the report recommends that the National Register-listed property be considered for a boundary expansion to encompass an additional 3,300 acres beyond the former park boundary of 1749.49 acres.<sup>6</sup>
- Park interpretive staff have developed recommendations for trail expansion, viewshed enhancement, interpretive and contemplative node development, wayside exhibit replacement, and cannon siting in support of the visitor experience and interpretation of the Battle of Wilson's Creek. The recommendations are consistent with the 2004 CLR, although in some cases expand on them or amend them based on current scholarship, and articulated in the park's 2009 Long-Range Interpretive Plan.
- The deer population within Wilson's Creek National Battlefield is considered overabundant and beyond the accepted carrying capacity for the species. Deer pose a threat to the safety of visitors within the park, and to motorists traveling along the roads that edge the park where deer often travel. Deer have caused numerous accidents on adjacent roads, leading to injuries to motorists and animals, and damage to vehicles. Deer browse is also negatively affecting the health and vigor of the park's native plant communities and the effectiveness of crop exhibits. The park needs to develop deer management strategies that result in a reduction in the deer population.

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6. American Battlefield Protection Program, *Update to the Civil War Sites Advisory Commission Report on the Nation's Civil War Battlefields State of Missouri* (Washington, D.C.: National Park Service, March 2011), 15.







Figure 3. Detail, N.C. Wyeth, "Battle of Wilson's Creek," 1920, Missouri State Capitol.

## Update to Chapter Two: Site Physical History

### Background

This chapter provides information about the physical changes that have occurred at Wilson's Creek National Battlefield since 2004 specifically relating to the park's cultural landscape and the areas used by visitors. The changes are indicated in chronological order by year. In addition to the physical changes documented herein, this chapter lists the studies and reports that address and support resource management and interpretation, including recent scholarship related to the Battle of Wilson's Creek.

### Recent Scholarship, Battle of Wilson's Creek and Park Development

The August 10, 1861, Battle of Wilson's Creek (fig. 3), known to the Confederacy as Oak Hills, was the second major battle of the Civil War. It resulted from efforts on the part of both the Union and Confederacy to control the border state of Missouri. Although the majority of Missouri residents wished to remain neutral in the conflict, Governor Claiborne Fox Jackson actively worked to lead Missouri into secession. As a result, the Missouri State Guard engaged in skirmishes with Union troops deployed within the state in June and July 1861. In July, a popularly elected state convention, which had rejected secession in March 1861, reconvened and declared the governor's office vacant as a result of his actions; Jackson, however, refused to accept the decision and continued to act as governor.

In addition to the efforts of the Missouri State Guard, Confederate troops were also present within the state during the summer of 1861. In early August, Union Brig. Gen. Nathaniel Lyon's Army of the West was stationed near Springfield. A Southern coalition army composed of Brig. Gen. Benjamin McCulloch's brigade, a brigade of Arkansas State Troops under the command of Gen. Nicholas B. Pearce, and the Missouri State Guard under the command of Maj. Gen. Sterling Price that was traveling through the area decided to approach the Federals. At the same time, Lyon, recognizing the potential threat, decided to attack the approaching forces. During the night of August 9, the entire Southern coalition army, which included the

Missouri National Guard under the command of Maj. Gen. Sterling Price, were camped along Wilson's Creek, 12 miles southwest of Springfield. It was here that Lyon decided to attack early on the morning of August 10. The ensuing Battle of Wilson's Creek pitted 5,400 troops under Lyon's command against a coalition of Southerners totaling 12,000. McCulloch's troops joined Price, along with the Arkansas State Troops commanded by Gen. Nicholas B. Pearce. Lyon was also supported by Col. Franz Sigel.

After the initial surprise of Lyon's early morning attack wore off, the Southerners moved to attack the positions established by Lyon's forces three times, although they were never successful in breaking the Union line. During the battle, General Lyon was killed, while Sigel's column was routed south of Skeggs Branch. Following these disastrous events, the Union troops withdrew and retreated toward Springfield.

With their victory, the Southerners gained at least a temporary foothold in southwest Missouri. They also became emboldened and conducted several unsuccessful efforts to gain territory to the north. The Union would however go on to control much of Missouri for the remainder of the war.

Since 2004, several books and reports have been written to supplement the two sources that supported the understanding of the battle conveyed in the CLR, both co-authored by William Garrett Piston and Richard W. Hatchett III: *Wilson's Creek: The Second Battle of the Civil War and the Men Who Fought It*, and *Kansans at Wilson's Creek; Soldiers' Letters from the Campaign for Southwest Missouri*. The emerging scholarship has helped to refine the park's understanding of troop movements and the role of the landscape in the battle, including an expanded understanding of the role played by areas that lie outside of the legislated park boundary. Sources of recent scholarship indicated as of interest by the park include:

- Patrick, Jeff. *Campaign for Wilson's Creek: The Fight for Missouri Begins*. Abilene, Texas: McWhiney Foundation Press, May 2011.
- \_\_\_\_\_. "Missouri's Bloody Hill; Civil War Erupts at Wilson's Creek." *Hallowed Ground Magazine*, Summer 2011.
- Hess, Earl J., Richard W. Hatcher III, William Garrett Piston, and William L. Shea. *Wilson's Creek, Pea Ridge, and Prairie Grove*. Lincoln: University of Nebraska Press, 2006.
- Langum, Connie. "The Battle for Wilson's Creek; Creation and Evolution of a National Park." In *Hallowed Ground Magazine*, Summer 2011.

## Physical Changes associated with the Park's Cultural Landscape following Completion of the 2004 CLR, and Studies Important to Resource Management

### 2003 (not documented in the 2004 CLR)

In April, the Visitor Center was expanded to include a 7,200-square-foot library annex.

In May, an F2 tornado crossed the park, destroying 3,500 feet of split rail fencing and 6,400 feet of boundary fencing. Downed trees were recorded as blocking 6,450 feet of the park's trail system.

### 2004

Professor William Garrett Piston, co-author of *Wilson's Creek: The Second Battle of the Civil War and the Men Who Fought It*, and *Kansans at Wilson's Creek; Soldiers' Letters from the Campaign for Southwest Missouri*, testified before the Congressional House Subcommittee on National Parks regarding the need to expand the authorized boundary of Wilson's Creek National Battlefield. Piston's testimony contributed to passage of the **Wilson's Creek National Battlefield Boundary Adjustment Act of 2004**.<sup>1</sup>

A 102-acre parcel was placed under **conservation easement** through the Farm and Ranch Lands Protection Program (since renamed) administered by the U.S. Department of Agriculture (U.S.D.A.). Funding for the easement was provided by the U.S.D.A., private donors, and monies raised by the Wilson's Creek National Battlefield Foundation.

The park completed its first Strategic Plan, supported by input from all employees.

Two projects were completed within the park in September that addressed the historic landscape and other areas visited by the public.

The first entailed replacement of the thermal windows in the park **Visitor Center** (PMIS project 41751). The second entailed painting the **Ray House** (PMIS project 97849), indicated as a 5-year cyclical project.

In December, the park completed a **Fire Management Plan** and **Environmental Assessment**. The plan addressed park goals associated with the protection of threatened and endangered plant species; identified measures to avoid and mitigate adverse impacts associated with wildland fire; indicated the appropriate use of prescribed fire for fuel management and to increase the distribution and abundance of the federally endangered Missouri bladderpod (*Physaria filiformis*); and how fire would be used to manage natural resources as part of a broader effort involving rehabilitation and interpretation of the battlefield landscape. The fire management plan also addressed measures that would be used to maintain the ecological integrity of desirable habitat, including glades. Finally, the fire management plan described how prescribed fire would be used to reduce exotic species distribution and abundance. It also provided suggestions for measures to address the park's goal of increasing public awareness about the role that fire plays in natural processes, the restoration of natural habitat, and the rehabilitation of the cultural landscape.

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1. H.R. 4481, amending Public Law 86-434 establishing Wilson's Creek National Battlefield.

## 2005

Wilson's Creek National Battlefield, with the support and assistance of the Wilson's Creek Foundation, acquired the 19.84-acre General Sweeny's Civil War Museum property (Tract 01-109), which included the museum and its Civil War memorabilia and artifact collection, for approximately \$4.5 million. The museum housed one of the most outstanding private collections of Civil War artifacts and memorabilia in the world. Created by Dr. Tom Sweeney in the early 1990s, the museum was named for his ancestor, Gen. Thomas Sweeny, who fought in the Mexican-American and Civil Wars, including the Battle of Wilson's Creek. Acquisition of the property followed passage of the Wilson's Creek National Battlefield Boundary Adjustment Act of 2004 that authorized expansion of the park boundary.

The Civil War Trust included Wilson's Creek on its list of most endangered Civil War battlefields due to developer proposals to construct a 1,500-unit residential subdivision west of the park. Concerns were raised that the subdivision might also serve to attract additional development.<sup>2</sup>

Five projects involving repair and construction that addressed the historic landscape and other areas visited by the public were completed during 2005.

In March, the wood stringers associated with the **Wire Road (County) bridge** were replaced after being assessed as unsafe for ongoing pedestrian and equestrian use during a Federal highway bridge inspection (PMIS project 102730). The inspection indicated the presence of deteriorated structural members resulting from debris and water becoming trapped behind the bridge after heavy rain storms. The bridge, built in 1910, is one of the few remaining metal truss bridges in the local area. It is an important feature of the Wire (or Telegraph) Road that extends through the park. The Wire Road was used as a means to transport military equipment and troops throughout the Civil War. It can also be tied to the Civil War military engagements at Dug Springs and Pea Ridge. The repair project, completed by a contractor, entailed the removal, disposal of, and replacement of all wood decking, runners, and stringers. For safety purposes no more than one-third of the bridge was dismantled at any one time. New oak bridge timbers, including approximately 100 runners, 50 decking planks, and 24 stringers, all of which employed full-dimension lumber, replaced the deteriorated elements of the structure. The decking was fastened using new hardware consisting of 30 Penney nails. Stringers were fastened with new hardware of the same size, dimensions, and strength as the original.

In May, the **McElhaney smokehouse** was rehabilitated (PMIS project 102734). The building was painted and re-roofed, the foundation was patched, and the doors and windows were re-built and replaced.

In July, the park completed emergency stabilization of the **McElhaney barn** (PMIS project 87561). Work entailed completion of a project initiated in 2000, but placed on hold after structural problems were found to be more extensive than previously thought. The park repaired sills, support beams, and exterior siding. Two rotted support beams were replaced, while four others were repaired. Stairs in the northwest corner of the barn that did not meet code were also replaced, along with several sills. Holes in the siding were repaired. A ramp was constructed to provide access to the front door. Emergency stabilization was conducted to correct the drainage problems that had contributed to the deterioration of the barn's structural wood beams and sills. A culvert was installed to redirect the overland flow of stormwater, while the ground was graded to help water drain away from the building foundation.

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2. Civil War Trust, "Civil War Preservation Trust Unveils Most Endangered Battlefields List" (February 24, 2005), Available at <http://www.civilwar.org/aboutus/news/news-releases/2005-news/civil-war-preservation-trust-3.html> (accessed April 12, 2017).

Another project completed in July 2005 was stabilization of the **Edwards Cabin** (PMIS project 106302). The cabin, which was built c. 1850 elsewhere and moved to the park c. 1965, had been placed near the location of the original Edwards Cabin that stood during the Civil War Battle of Wilson's Creek. The original Edwards Cabin, which is no longer extant, served as General Price's headquarters during the battle. As documented in 2004 as part of the CLR, the cabin sat on a dolly, protected under plywood sheathing, while the park decided how to treat it. The 2004 CLR recommended that the park rehabilitate the cabin and interpret it as a placeholder for the cabin used as Price's Headquarters. The current cabin represents implementation of this recommendation. Work associated with this project entailed taking the cabin apart, digging and placing footings, installing roof trusses, framing, and shingles, and replacing several support logs. The cabin was then reassembled, the logs chinked and white washed, and windows and doors installed. Finally, the park added a porch, fireplace and chimney, plastered the interior, constructed a floor, and fabricated steps and a ramp for universal accessibility. The Wilson's Creek National Battlefield Foundation funded 75 percent of the project, estimated at \$40,000.

In December, the park worked to remove hazards associated with pedestrian use of the **Wire Road Trail** (PMIS project 111416). The work entailed replacing 120 square feet of asphalt and adding a culvert across a spring branch where a wash out had occurred near the Shuyler Creek low water crossing. Vegetation was removed along the margins of the Wire Road for approximately 1 mile. The park also repaired 4,200 linear feet of ruts associated with the route, some of which were as much as 1 foot wide and 8 inches deep.

## 2006

The park acquired three parcels totaling **157.03 acres** (Tracts 01-126, 01-127, and 01-128) in 2006. The acquisition included land between the southern boundary and Old Limey Road, as well as land to the west of Highway ZZ near the park's southwestern corner.

Also secured in 2006 was an **easement for a 70-acre parcel** to be administered by the U.S.D.A. as part of their Farm and Ranch Lands Protection Program.

In August, the park's first Business Plan was completed. The document was used to clearly communicate the park's financial status with principles and stakeholders.<sup>3</sup> The business plan articulated goals for several projects related to resource management, including restoration of the cultural landscape and maintenance of historic buildings and structures.

The park completed eight projects that addressed the historic landscape and other areas visited by the public.

The first entailed the removal of hazards to pedestrians associated with the **Ray Springhouse Trail** (PMIS project 111418) that connects visitors with the Ray springhouse and cornfield, including the installation of two culverts to address stormwater management, and construction of an earthen path to replace a washed out boardwalk/bridge structure.

In July, the **Ray House** roof was replaced (PMIS project 102763). The project was designed to address structural deficiencies ranging from cupping and breaking of the shake shingles to problems with leaking. As part of the project, the park removed and replaced all wood shakes; removed the old nails from the sheathing; replaced five damaged sheathing boards and damaged flashing and grout; installed zinc roofing strips to prevent moss buildup; and installed a fall protection system to provide safe roof access for future roof maintenance. Eight new lightning rods were also mounted on the roof. During the project, a covered

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3. National Park Service, "Wilson's Creek National Battlefield—FY 2005 Business Plan" (2006).

walkway was constructed to provide safe visitor access to the building during the project. The roof had last been replaced in 1984; the need for replacement had been identified during a site inspection by National Park Service regional architect, Al O'Bright, in 2000.

In September, the landscape around the Visitor Center was updated (PMIS project 102822). The project included replacement of **four benches** near the Visitor Center entrance, and 1,300 linear feet of deteriorated **split rail fencing** nearby. The new benches were selected for low maintenance characteristics to reduce cyclic maintenance costs. The park was able to use Youth Conservation Corps (YCC) labor to implement the project.

In October, foundation cracks in the **McElhaney storm cellar** were repaired (PMIS project 102976). As part of the project, 160 square feet of concrete wall was repaired and a wooden door replaced. The work helped to establish a dry interior so that the structure could function as an emergency tornado shelter.

Additional work conducted in October included elimination of hazards associated with the **Ray Cornfield Trail** (PMIS project 111415). The project involved filling ruts for a distance of approximately 1 mile. Some of the ruts were up to 12 inches deep. After the ruts were filled, waterbars were added in four locations, and the trail was surfaced with chat. Vegetation found to be encroaching on the trail was removed or trimmed. Two deteriorated directional signs were also replaced.

In November, fire suppression systems were replaced in the **Ray House, McElhaney House, and Visitor Center** (PMIS projects 77435, 77427, 77441). The new fire alarm system was connected to the security system and the obsolete system removed.

Additional work conducted in November included repair of **tornado damaged facilities** (PMIS 108424) resulting from the May 2003 storm that had caused extensive damage to vegetation, fencing, cemetery features, trails, and bridge abutments. The project entailed removal of downed and standing hazardous trees from 4,400 feet of boundary fence and 6,450 feet of trail; establishment of a 6,500 foot fire break; replacement of 3,613 feet of boundary fence and 3,500 feet of split rail fence; repair of a damaged cemetery and stone fence; removal of logs threatening bridge abutments; and the re-opening of equestrian/hiking trails. Park staff removed hazardous trees and made repairs to the Manley cemetery; removed hazardous trees from the entire Manley Uplands trail (2.2 miles), including 3,000 feet of the trail that had been completely blocked due to downed trees; moved trees from 3,500 feet of boundary fence; moved logs threatening the bridge; and rebuilt approximately 3,600 feet of split rail fence. The project also funded construction of a 4,000-foot-long, 50-foot-wide fire line. Over 225 loads of hazardous fuels were taken out of the park by truck. Standing dead trees were downed along a 50-foot strip of land inside of the fire line. The work took a contractor approximately 3 months to complete.

In December, twenty-three defective **traffic signs** were replaced (PMIS project 113091), including four "Reduced Speed Ahead," three "Speed Limit," two directional, two boundary, five "Stop," six "One-Way," and one parking sign.

2007

The principal accomplishment of 2007 was completion of a **General Management Plan Amendment and Environmental Assessment/Assessment of Effect for the Civil War Museum and Additional Lands** resulting from the park boundary expansion act of 2004.<sup>4</sup> As noted in the document,

The 2003 General Management Plan/Environmental Impact Statement for Wilson's Creek identified important resources associated with the Battle of Wilsons Creek that are not managed or protected by the National Park Service and recommended adjusting the national battlefields boundaries in number of areas to protect these critical resources and enhance opportunities for public enjoyment portion of the recommended lands were added to the national battlefield in 2004.

This General Management Plan Amendment/Environmental Assessment/Assessment of effect proposes management alternatives for two of the areas identified in the boundary assessment the Civil War Museum and its surrounding 20- acre site and 154-acre area that adjoins the national battlefields southwestern boundary. Two action alternatives are compared with the no-action alternative that describes the continuation of existing conditions.

- Alternative B - Relocate the Civil War Museum Collections into an Addition to the Wilsons Creek National Battlefield Visitor Center Preferred Alternative Under this alternative the existing Civil War Museum would be closed and the museum collections moved into an addition to the Visitor Center built for curatorial storage and exhibit space Most NPS administrative functions would remain in the Visitor Center.
- Alternative C - Move the Civil War Museum Collections into Existing Administrative Space in the Visitor Center Under this alternative existing space in the Visitor Center would be rehabilitated for curatorial and exhibit space for the museum collections Most NPS administrative functions would then move into buildings previously used as residence and museum on the 20-acre site which would be rehabilitated for this purpose.
- Under both action alternatives the 154 acres adjacent to the southwestern boundary would be managed consistent with the management zoning on the adjacent lands. Limited visitor parking and pedestrian trails could be developed including the potential for link to the national battlefield Sensitive cultural and natural resources in this area would receive high level of protection. Any construction or operational activities would be done in sustainable manner to minimize adverse impacts on natural and cultural resources.

The entire park was declared a Federal disaster area following damage caused by an ice storm that began on January 12, 2007. During the evening of January 12 ice formed on trees and power lines. The park and approximately 75 percent of the employees duty-stationed at Wilson's Creek and Missouri State University lost power to their residences. By January 13, power was out to most park buildings, while downed trees and limbs blocked roads, buildings, and trails. Ice and rain continued to fall on January 13 and 14, with a total accumulations exceeding 1.5 inches. The park was closed January 13 due to the presence of hazardous trees and limbs. Three buildings in the park had no power for two weeks; critical systems were operated with generators. Park staff, supported by Fire Pro and maintenance staff from Buffalo National Riverways and Ozark Scenic Riverways, worked to establish emergency routes to critical

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4. National Park Service, *Wilson's Creek National Battlefield General Management Plan Amendment/Environmental Assessment/Assessment of Effect for the Civil War Museum and Addition Lands* (July 2007).

areas of the park and to clear hazardous material from the Visitor Center and maintenance area. The Visitor Center re-opened on January 19.

Work to remove **hazardous trees and limbs** from 6 miles of roads, three trails, and emergency routes to an additional 10 miles of trail continued for months. The 5-mile Tour Road, associated stops, and the three primary trails (Ray House, Ray Springhouse, and Bloody Hill) re-opened on February 5. Archeological compliance was required for a 1 acre site that was disturbed at the Ray House due to uprooted trees exposing the soil. Funding for some of the work was secured through PMIS project 136056.

Overall, approximately 1,800 hazardous trees were cut and cleared, while hazardous limbs were removed from approximately 750 trees along 9 miles of trail and 6 miles of roads, as well as within 28 acres associated with the Visitor Center, Civil War Museum, Sweeny House, Ray House, and Tour Road stop 5. Trees and limbs were removed from boundary fences, and the fences themselves subsequently repaired as needed. Approximately 30 stumps were ground, and approximately 30 cubic yards (5 dump truck loads) of brush were hauled to an off-site disposal site. Approximately 30,000 cubic yards of brush was burned, while 180 cubic yards of brush was chipped, on site. Trees were later replanted in some locations.

Four construction-related projects were completed during 2007 that addressed the historic landscape and other areas visited by the public.

In August, cracks associated with the **Tour Road** were repaired (PMIS project 25523). Specific tasks involved repair of one bridge approach and departure, scrub seal along 6-miles of road and within 10 parking areas, and re-striping of all roads and parking areas. The Tour Road and parking areas were closed for approximately 2 weeks while the work was completed.

In October, the **Ray House porch and door** were repaired (PMIS project 114104). Rotted wood associated with six original solid walnut porch support posts was replaced. The project entailed demolition of 25 linear feet of damaged porch railings and spindles, installation of in-kind materials, and sanding and painting of the new wood. Door repairs was directed to address problems with the door frame, jam, threshold, and facing. The corner trim boards in five areas of the house were also replaced, sanded, and painted.

Also in October, four **abandoned wells** were documented and filled for safety (PMIS project 118526) in accordance with Missouri State Law 10 CSR 23-2.110. The law stipulates that abandoned wells be plugged for safety and to prevent contamination of water resources. To address the need, the park first located the historic wells. The wells were hand-dug and stone-lined, measured 2.5 feet in diameter, and varied in depth from 10 feet to 25 feet. The park photographically documented the wells and engaged National Park Service archeologists to complete Section 106 compliance. The wells were then filled with sand and a clay cap over the top 2 to 4 feet.

In November, the concrete associated with the **Visitor Center parking area** was repacked. The work entailed refilling all of the joints on the parking area and islands where the asphalt meets the concrete curbing. Filling the joints and cracks helps to prevent water infiltration, which can result in damage due to freeze/thaw conditions.



1     **2008**

2     In 2008, the park acquired **six parcels totaling 42.39 acres** (Tracts—01-112; 01-138; 01-139; 01-140; 01-  
3     141; and 01-142) located along the park's southwestern boundary. **Easements** were also secured on four  
4     other parcels located south of the park and Old Limey Road, as well as east of the park to the north and  
5     south of the Greene-Christian County line.

6     Four construction-related projects were completed in 2008 that addressed the historic landscape and  
7     other areas visited by the public.

8     In March, the park **entrance road shoulder** was rehabilitated (PMIS project 113995). The project  
9     entailed demolition of 720 square feet of the damaged shoulder, and its replacement with bituminous  
10    concrete. Bermuda grass growing through the shoulder pavement was found to be the cause of the  
11    deterioration. The grass was treated with herbicide as part of an effort to eradicate it from the area and to  
12    prevent similar problems from occurring in the future. The project was critical to prevent the road base  
13    from eroding in a location where asphalt is required because portions of the slope are too steep to  
14    maintain grass, and the shoulder is often used as a pull off where visitors photograph the park entrance  
15    sign.

16    In September, 2-1/2 miles **park trails and overlooks** were rehabilitated (PMIS project 102804) to address  
17    resource and safety deficiencies. The trails that were the focus of the project included the Southwest Trail,  
18    Jeff's Trail, Pulaski Trail, Guibor Trail, and the East and West Overlook Trails. Many of the trails had been  
19    previously impacted by the heavy equipment used to remove tornado-damaged trees and debris, but were  
20    also deteriorated due to years of visitor use. The efforts conducted on behalf of the project included  
21    repair of trail alignments, tread surfaces, signage, bridges, drainage, and retaining structures. As part of the  
22    effort, thirteen railroad ties and landscape timbers were removed where previously used as waterbars. The  
23    timbers had become tripping hazards, while those treated with creosote were also of environmental  
24    concern. Bridges and overlook stairs were also repaired through the replacement of decking boards and  
25    safety railings, and then sanded, and painted. Three bridges were rebuilt with recycled plastic. Trail  
26    drainage structures were also repaired. Positive drainage was effected in some locations using fill.  
27    Elsewhere, holes were filled. After the repairs were completed, crushed stone was spread on the trails, and  
28    encroaching vegetation was removed. Related site furnishing projects included the repair, sanding, and  
29    painting of five wayside exhibits, replacement of one trail sign, and repair, sanding, and painting of  
30    benches.

31    In September, additional **hazardous trees** were removed (PMIS project 118462). The effort entailed  
32    cutting and removing 5 acres of trees and brush up to 6 inches in diameter, and brush hogging 2.5 acres of  
33    woody thickets where they impeded motor vehicle sightlines near twenty-four entrance and exit points.  
34    An additional 100 hazardous trees were removed along the 5-mile Tour Road. This effort followed  
35    previous work conducted in response to the January 2007 ice storm. After the work was completed, only  
36    the nature trail remained closed.

37    Also completed in September was a project to replace **picnic area benches and tables** (PMIS 118500). As  
38    part of the effort, 33 wooden picnic tables and 7 benches were added to the picnic area, and 26 existing  
39    tables and 7 benches were removed. The new picnic area furnishings were fashioned from recycled plastic  
40    and designed to meet accessibility standards. The picnic tables being replaced were more than 12 years  
41    old, and consisted of metal frames with CCA-treated wooden planks. The wood components of the  
42    existing picnic tables and benches were often split, warped, and rotting. Several had already been  
43    removed due to concerns for visitor safety. The CCA-treated wood was no longer an acceptable material  
44    for playground areas or for use as an eating surface.

## 2009

One of the most important accomplishments of 2009 was completion of the park's **Long Range Interpretive Plan** in June. The plan outlined recommendations for future interpretive services, facilities, and media. It identified interpretive themes, described visitor experience goals, and recommended a wide variety of personal and non-personal interpretive services and outreach activities intended to communicate the park's purpose, significance, and themes, while recommending implementable actions anticipated to occur over a seven- to ten-year period. Plan highlights include:

### *Visitor Center*

- Plan, design and fabricate new exhibits that combine the artifacts from the Civil War Museum with the current Visitor Center exhibits. Create one visitor flow pattern, one cohesive message and a unified visitor experience that provides a seamless museum exhibit experience. The exhibit plan must address current themes, remove ineffective messages, and upgrade the exhibits to meet National Park Service exhibit standards.

### *Education Program*

- Hire a Park Ranger for Interpretation and Education Coordination.
- Limit the number of formal programs offered and provide self-service options for those schools that are not able to participate allowing the staff to have better control of the program and to provide quality programs.

### *Bloody Hill*

- Improve the visitor experience at Bloody Hill by emphasizing its importance during the Battle of Wilson's Creek. New wayside exhibit panels, artillery placement, a shade structure, re-alignment of the trail network and new artwork will create more opportunities for visitors to engage in the resource.

### *Tour Road*

- Establish a new first stop where the Short Farm was located to emphasize the lives of the residence more effectively. The first combat action between the federals and the southerners occurred near their house. Change Gibson's Mill tour stop to Plummer's Crossing. This is where the Union entered the Ray cornfield and provides more context for the tactics of the battle.

### *Terrell Creek Acquisition*

- Create a Double Spring Day Use Area where the Wire Road crosses the creek so that visitors can view a place where both armies are known to have camped and rested. A modest picnic area and wayside exhibits could be placed here.

### *Special Events*

- Plan for and participate in the 2011–2015 Civil War Sesquicentennial.
- Plan for and participate in 2016 National Park Service Centennial.<sup>5</sup>

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5. National Park Service, Midwest Regional Office, Harpers Ferry Center Interpretive Planning, *Wilson's Creek National Battlefield Long-Range Interpretive Plan* (Republic, Missouri: National Park Service, June 2009).

Also completed in 2009 was a **Land Protection Plan** for the park, which provides direction regarding the protection of cultural resources related to the park's mission.<sup>6</sup>

In addition, the park conducted six construction projects that addressed the historic landscape and other areas visited by the public.

In March, the Visitor Center **entrance gates** were replaced (PMIS project 119600). Work entailed demolition of deteriorated existing gates, posts, and signs. New gates were constructed with bolts and plates made of galvanized steel and wood members fashioned from treated Southern yellow pine. The gates were supported by concrete bases inset with 8x8 wood posts. The concrete around the posts was rounded so water would not collect around them. The posts extended for 4 feet above the grade of the concrete. The gate arms were made of 6X6 Southern yellow pine. All wood was held together by steel pins, steel bolts, steel rods, formed steel plates, screws, and washers. New National Park Service identity and hours signs were also posted on the front of the Visitor Center entrance gate, while the vehicle counter was demolished. A solar panel system was installed to light the entrance and Visitor Center signs.

In April, the **Tour Road and parking area** were re-striped (PMIS project 142134).

In September, four **roadside ditches** were rehabilitated (PMIS project 113274). The project was intended to address previous problems where water had begun flowing over park roads due to sedimentation, vegetative growth, and failure of stormwater management structures. Ditch rehabilitation was conducted along Farm Road 194, McElhaney Road, and to the north and east of the Ray House parking area. As part of the project, woody vegetation and sediment and rock removed, and culverts installed where problems associated with standing water were identified. The ditches were subsequently sodded and seeded.

Also in September, the **Ray House exterior was painted** (PMIS project 128430) to address exterior envelop deficiencies that were contributing to deterioration of historic building fabric. The project entailed scraping away loose paint, sanding, priming with latex primer, and painting with latex paint. Approximately 150 square feet of deteriorated wooden siding was removed, with new siding fabricated and installed. The new siding was stamped with a contemporary date on the backside to clarify the change for future investigators. The siding was sealed with 25-year latex caulk. The area around the exterior chimney was re-pointed with new mortar. The threshold of the south-facing door was replaced with a custom-fabricated oak threshold. Two windows were also re-glazed. Several loose chimney cap stones were re-mortared on the rear chimney, while approximately 40 square feet of the foundation was re-pointed. A new handicap ramp was built out of recycled plastic lumber and installed at rear entrance.

Another project completed in September was the **repointing of the Ray springhouse** (PMIS projects 133044 and 102961). The project entailed re-pointing mortar joints on 310 square feet of the structure, including the roof and principal facade. All loose mortar was scraped away and replaced. The Portland cement mortar mixture was consistent with the formula developed as part of a rehabilitation project conducted in 1986 (ASTM C150, Type II, white non-staining; lime: ASTM C207, Type S; and sand: C144, natural or manufactured). The color was matched as nearly as possible to the existing. Missing stones were replaced with stone from a local quarry and matched to the original.

In November, the **Manley Trail** was rehabilitated (PMIS project 106211). The project was designed to address health and safety deficiencies on the 2.2 mile trail. It entailed backfilling holes to eliminate tripping hazards, removal of overhead limbs, and repair and replacement of deteriorated and displaced

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6. Wilson's Creek National Battlefield, *Land Protection Plan Wilson's Creek National Battlefield* (Republic, Missouri: National Park Service, July 2009).

waterbars. The project resulted from impacts to the trail caused by the heavy equipment used to remove tornado damaged trees and debris. The trail surface was found to be rutted throughout. Because equestrians often avoid ruts by going around them, the trail had become wider, increasing the area requiring repair. After the ruts were filled, twelve new waterbars were installed, while another 30 waterbars were repaired. Aggregate was then spread on the trail surface, and encroaching vegetation removed.

## 2010

Four construction projects were completed that addressed the historic landscape and other areas visited by the public in 2010.

In January, the **picnic area retaining walls** were replaced, along with 140 linear feet of deteriorated wood safety railing (PMIS project 113986). The retaining wall, a deteriorated 20-year-old, 6-foot-high creosote treated railroad tie structure used to establish a level base for a group picnic site and three additional picnic sites, was removed. A replacement wall was built from precast concrete interlocking block. A new galvanized railing was added to replace a deteriorated wooden safety railing.

In March, the **bike racks and parking blocks** associated with the Tour Road were replaced, while the **bollards** at the tour stops were stained (PMIS project 113400). The project was designed to address concerns regarding rotting bike racks and warped parking blocks. Five bike racks were replaced with recycled plastic racks, while 127 parking blocks were replaced with recycled rubber blocks. In addition, 98 bollards were re-stained.

In April, 30 trees were planted west of the Ray House to implement the CLR recommendation to add an **orchard** as an interpretive aid for visitors. The orchard was designed to recall a historic feature of property during the Civil War era. Three apple cultivars were planted as part of the exhibit—'Gold Rush,' 'Enterprise,' and 'Jona Free.'

In November, the **McElhaney House and well house** were rehabilitated (PMIS project 102961). Used for law enforcement, resource management, and interpretive personnel offices, the McElhaney House and associated well house are the only restroom and potable water supply features available to employees and volunteers inside the park. The McElhaney House was in needs of several repairs, including shoring up of 40 linear feet of foundation; replacement of 20 inadequate foundation piers in order to support the sagging first floor; fastening of building sills to the foundation; replacement of a deteriorated rear stoop and stairs; removal and replacement of deteriorated shingles, felt, guttering, and downspouts; replacement of the existing propane furnace with a high efficiency furnace; replacement of all HVAC ducts with rigid insulated ducts; painting of the exterior of the house, front porch, and stairs; replacement of 40 square feet of deteriorated 3 inch lap siding; and various interior rehabilitation projects. Four exterior doors were also repaired, while three new doors were installed. The septic tank and leach field were also replaced.

The McElhaney well house rehabilitation resulted from deficiencies documented by Robert J. Reiss in a Public Health Assessment dated May 13, 2004. As the only water supply for the McElhaney House kitchen and restroom, the building is required to be kept in good condition, and comply with sanitation standards. The building was found to have rotted siding and exhibit evidence of rodent use and damage. The insulation was found to be torn up or missing, and the roof deteriorated and leaky. The chlorinator was found to be leaking solution onto the floor, while the pressure tank was rusted and in danger of failing. Wiring and controls were found to be in need of replacement. Heat was provided with a plug-in type electric heater that was considered insufficient to protect the pressure tank from freezing, which

would lead to a lack of flow of water within the McElhaney House. Work entailed removal of encroaching tree limbs, followed by demolition of the 63-square-foot building. Using the existing concrete slab, a new foundation was dug, forms were constructed, and a concrete foundation 8 inches thick x 24 inches deep poured for the 32.5 foot perimeter. The new building was constructed of concrete block walls to a height of 8 feet. Rafters and a roofing system were then added, along with 36 inch x 84 inch double insulated steel doors, a new chlorinator, pressure tank, controls, wiring, install a permanent heater, and a 4 foot x 6 foot tall steel cabinet for supplies.

In December, **hazard tree and limb removal** was conducted along trails and in visitor use areas (PMIS project 152050). The project entailed removal and disposal of approximately 100 hazardous trees up to 12” in diameter, and numerous hazardous limbs. The work was conducted along 2,200 feet of the nature trail, 6 miles of road, and 7.6 acres of developed zone around thirty-five buildings, and twenty-two picnic sites. These efforts were part of the ongoing work to address damage caused by the 2007 ice storm.

## 2011

In March, the American Battlefield Protection Program (ABPP) of the National Park Service prepared an **Update to the Civil War Sites Advisory Commission Report** that addressed the significance and protection status of battlefields located within the state of Missouri, including Wilson’s Creek. Park Historian Connie Langum was the battlefield surveyor for the project.<sup>7</sup> The update was prepared as a result of the Civil War Battlefield Protection Act of 2002, which directed the Secretary of the Interior, through the National Park Service, to update the original Civil War Sites Advisory Commission report published in 1993. Congress obligated funding for the effort in 2005 and 2007.

The report notes that “The National Park Service owns about 1,970 acres at Wilson’s Creek, but other portions of the battlefield remain unprotected outside of the park’s boundaries.”<sup>8</sup> The report also indicates that

Private landowners have also begun to protect battlefield land. At Wilson’s Creek, a private family has voluntarily placed conservation easements on 172 acres of historic land outside of the National Battlefield’s boundary. A local land trust holds the easement in perpetuity and monitors the condition of the properties. The easements, executed in 2003 and 2006, are the first ever placed on Civil War battlefield land in Missouri. Many other states provide tax credits for private property owners who donate conservation easements that will permanently protect historic land. Further exploration of this powerful preservation tool is appropriate in Missouri.<sup>9</sup>

The 1993 report focused on prioritizing the protection needs associated with the nation’s Civil War battlefields, while documenting consistently, for the first time, the boundaries, core and study areas, and historic features associated with each historic battlefield. Wilson’s Creek was identified in the original 1993 study as a priority III battlefield (requiring additional protection).

The 2011 report provides updated ratings for Missouri battlefields, as well as revised boundaries and study areas and core areas, and a new boundary indicating the area potentially eligible for listing in the National Register of Historic Places. The revised boundaries were based on the new standardized survey methodologies devised by the ABPP, which incorporate U.S. Army military terrain analysis principles

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7. American Battlefield Protection Program, *Update to the Civil War Sites Advisory Commission Report on the Nation’s Civil War Battlefields* (Washington, D.C.: U.S. Department of the Interior, March 2011), 3.
  8. *Update to the Civil War Sites Advisory Commission Report*, 5.
  9. *Update to the Civil War Sites Advisory Commission Report*, 6.

known as KOCO A.<sup>10</sup> A manual prepared by ABPP in 2007 explains the survey methods used in the update. At the time the 1993 report was prepared, survey methodologies were in the process of being developed, and preceded completion of the National Register Bulletin: *Guidelines for Identifying, Evaluating, and Registering Historic Battlefields*, prepared by Patrick Andrus of the National Park Service.

The 2011 study suggests that Wilson's Creek, one of seven Missouri battlefields already listed in the National Register of Historic Places, should be considered for a National Register nomination boundary expansion to recognize the 3,300 acres of the delineated battlefield that fall outside of the National Park unit and current documentation.<sup>11</sup> The study suggests that a total of 2,968.48 unprotected, intact acres remain within the Wilson's Creek battlefield study area.<sup>12</sup> The report indicates that the Wilson's Creek study area extends over 5,109.74 acres, while the core area is 1,021.26 acres in size. The potential National Register eligible property is indicated as coincidental with the battlefield study area. Currently, only 1,749.91 acres of the battlefield are listed in the National Register of Historic Places.<sup>13</sup>

The report also notes that

At Wilson's Creek, residential development has begun to alter the battlefield's nationally significant landscape. Within the last ten years, dense subdivisions have been built within a mile of the northwest corner of the battlefield, and large lot estate homes have been built on the eastern portion of the battlefield just beyond the boundary of Wilson's Creek National Battlefield. Unless steps are taken by local governments to direct development away from the battlefield, or public-private partnerships can be forged to protect historic land outside of the national battlefield, it is entirely plausible that the park will be surrounded by development within two or three decades.<sup>14</sup>

The study also recognized the value of the Wilson's Creek Battlefield Foundation, active since 1950.<sup>15</sup> It indicated ongoing protection concerns related to the land west of the park boundary where a residential development was proposed. Construction of a new public high school to the north of the park and an associated increase in traffic were also considered problematic. State Highway ZZ, also known as Wilson's Creek Boulevard, was widened to accommodate the larger volume of traffic generated as a result of the new high school.

An electronic device application relating to the Civil War **Sesquicentennial** was developed to recognize the impending anniversary. The effort was modeled in part on the Battle App developed by the Civil War Trust to guide visitors through battlefield tours using GPS. The Sesquicentennial App developed for Missouri was developed by local groups and agencies, including Wilson's Creek National Battlefield and the Springfield-Greene County Library District. The Library had recently completed a "Community & Conflict" digitization project in 2009 that explored the Civil War's impact on soldiers and civilians in Missouri, Arkansas, Kansas, and Oklahoma. It was made possible through a Library Services and Technology Act Digital Imaging Grant funded by the Institute of Museum and Library Services coordinated by the Missouri State Library. The project was designed to expand public understanding of the Civil War in the Trans-Mississippi Theater by providing access to historical collections and promoting scholarship. One outcome was the interactive virtual museum for the Trans-Mississippi Theater funded

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10. KOCO A is an acronym that stands for Key Terrain, Observation and Fields of Fire, Cover and Concealment, Obstacles, and Avenues of Approach.

11. *Update to the Civil War Sites Advisory Commission Report*, 15.

12. *Update to the Civil War Sites Advisory Commission Report*, 24-25.

13. *Update to the Civil War Sites Advisory Commission Report*, 21.

14. *Update to the Civil War Sites Advisory Commission Report*, 19-20.

15. *Update to the Civil War Sites Advisory Commission Report*, 28.

by a Challenge Cost Share Grant from the National Park Service and a donation from the Wilson's Creek National Battlefield Foundation. The virtual museum and digital archive was based on the digitizing of Wilson's Creek National Battlefield's collections. The digital gallery addressed such topics as guerilla warfare, medicine, naval warfare, the role of women, and the experiences of Native American, African American, and German American soldiers.

The park celebrated the **Sesquicentennial of the Battle of Wilson's Creek** in August.

Park Historian Connie Langum conducted a **personal interview with Dorothy McElhaney** and her daughter Glenna. The three toured the Ray House together. Mrs. McElhaney, who was born in 1910, provided personal memories of the Ray House and conveyed stories told to her by her parents about the Battle of Wilson's Creek.

In July, a **Natural Resource Condition Assessment** report was completed for the park.<sup>16</sup>

Three construction related projects were completed during 2011 that addressed the historic landscape and other areas visited by the public.

In September, **bracing was installed in the McElhaney barn** to prevent the structure from collapsing (PMIS project 142061). The project entailed installation of eight lateral braces to stop exterior supports from moving outward. The braces featured 3/4 inch threaded rod with turn buckle connections on exterior columns. Four were placed in the first floor and four in the second floor. At the same time, three deteriorated wooden window frames and glass were replaced with new material of the same type and dimension to prevent weather infiltration, and the building exterior was repainted.

In November, the park completed **emergency repairs associated with the Tour Road** (PMIS project 119329). The project was developed in response to field review and inspection conducted in May 2005 by Federal Highways Geotechnical personnel. The inspection identified concerns regarding the stability of the rock outcropping overhanging a section of the Tour Road. The outcropping was the result of construction of a railroad line through the area in the 1890s. Portions of the rock outcropping were found to be eroding and ready to fall or shift toward the road. Sections recommended to stabilization through removal measured approximately 14 feet high, 10 feet wide, and 400 feet long. In addition to removal of 650 cubic yards of rock and soil, the project entailed clearing several acres of small brush along the top of the rock cut. A 4-foot-wide ditch was excavated to address drainage concerns. After these efforts were completed, the area was backfilled, graded, and sodded between the Tour Road and the rock outcropping.

In a related effort, the asphalt Tour Road was found to have settled 6 to 8 inches on both ends of a **box culvert** located near the rock outcropping. To address the problem, the park removed a 20-foot section of asphalt on the approaches to the box culvert, added 4 inches of base rock, replaced the asphalt, removed wooden forms causing spalling on the box culvert, patched cracks in the concrete and box culvert, and repaired the road. The road was closed while the repairs were completed.

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16. Gust M. Annis, Michael D. DeBacker, David D. Diamond, Lee F. Elliott, Aaron J. Garringer, Phillip A. Hanberry, Kevin M. James, Ronnie D. Lee, Michael E. Morey, Dyanna L. Pursell, and Craig C. Young, *Wilson's Creek National Battlefield Natural Resource Condition Assessment*. Natural Resource Report NPS/HTLN/NRR-2011/427 (Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, July 2011).

## 2012

Three construction-related projects were completed within the park in 2012 that addressed the historic landscape and other areas visited by the public.

In May, wood elements associated with the **Wire Road bridge** were replaced (PMIS project 102769). The stringers, decking, and steel substructure on the bridge were identified as requiring replacement during previous Federal Highways bridge inspections. This project is a 5-year cyclic need. The project entailed removal of the decking and stringers, priming and painting the steel substructure, and replacement of 40 wooden stringers, 96 deck timbers, and 33 deck runners.

Also completed in May were projects involving the reroofing and replacement of HVAC systems at the **Sweeny Museum** (PMIS project 133614). The building, which measures 8,000 square feet, was moved to its current location in 1964. It was acquired in 1988 by Tom and Karen Sweeney, who established the Civil War Museum in the building in 1991.

In August, new **wayside exhibits were installed on Bloody Hill** (PMIS project 65086). Bloody Hill, as its name implies, was a key area of the combat associated with the Battle of Wilson's Creek where approximately 85 percent of the 2,500 battle casualties occurred. Visitors access the site via a trail that extends between Tour Road stop 7 and the Lyon Marker. Prior to implementation of this project, visitors used a printed trail guide tied to numbered posts to learn about the battle. The 2009 Long-Range Interpretive Plan suggested the addition of new waysides at Bloody Hill. Based on the plan, fourteen new waysides were installed as follows:

- Trailhead Orientation
- Bloody Hill Overview
- Solkalski's Section
- Totten's Battery
- The Confederate Line
- Entering the Glade
- General Lyon's Death
- Commemoration on the Battlefield
- Sturgis Takes Command
- Price's Headquarters
- Third Arkansas
- No Man's Land
- The Sinkhole
- The Battle's Outcome



## 2013

In April, a study documenting **Vegetation Classification and Mapping of Wilson's Creek National Battlefield** was completed for the park.<sup>17</sup>

The *Heartland Invasive Plant Management Plan and Environmental Assessment* was also completed. The document specifies the protocols to be used by the park to control invasive plant species.<sup>18</sup>

Three construction projects were completed in 2013 that addressed the historic landscape and other areas visited by the public.

In May, several **bridges** were repaired (PMIS project 152036). This project entailed removal and disposal of soil and debris at bridges #2 and # 4; provision of additional rip rap, replacement of broken and deformed safety cables, replacement of a stringer and rivets, and adjustment of a stringer bracket, on the Wire Road bridge; and repair of erosion at the ends of the north wing walls on bridge # 4. Deficiencies had been documented in a Federal Highways bridge inspection conducted in 2006. These were compounded by flooding in March 2008 that resulted in a Federal Disaster Area Declaration (FEMA 1749-DR) for Greene and Christian Counties, including the battlefield. The Tour Road bridge was repaired through removal of debris; repair of erosion and removal of asphalt on the four corners; and relocation of a sign that had been mounted on the bridge to a pole in the ground. Vegetation was cut back approximately 10 feet from the bridge.

In August, the **windows in the McElhaney barn** were replaced (PMIS project 152122).

In December, **historic structure repairs** were completed at the Ray and McElhaney houses (PMIS project 161364). Work entailed deep repointing of 75 square feet of the Ray House foundation using a soft mortar mixture; removal, disposal, and replacement of the Ray House roof, composed of approximately 1,900 square feet of rough cut, 18-inch, fire treated, cedar shakes; installation of zinc strips every fifth row to prevent algae growth; removal of lichens from the limestone chimney of the Ray House; improvement of the drainage around the Ray springhouse by providing an additional 2 yards of fill, grading, and seeding; power washing and painting of the exterior of McElhaney barn and associated replacement of 300 linear feet of furring strips and paint.

## 2014

In February, the park completed an **Environmental Assessment for Resource Preservation and Visitor Interpretation of Bloody Hill**.<sup>19</sup> The purpose of the Environmental Assessment was to identify solutions, define outcomes, and find ways to protect sensitive resources while also enhancing interpretation for visitors to Bloody Hill. Fifty acres of the 200-acre landform were designated a resource preservation zone in order to protect sensitive natural resources. Another 100 acres were designated a battlefield landscape enhancement zone in which the general historic character of the battlefield is to be retained and

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17. David D. Diamond, Lee F. Elliott, Michael D. DeBacker, Kevin M. James, Dyanna L. Pursell, and Alicia Struckhoff, *Vegetation Classification and Mapping of Wilson's Creek National Battlefield Project Report*. USGS-NPS Vegetation Mapping Program (Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, April 2013).
  18. Sherry A. Middlemis-Brown and Craig C. Young, *Heartland Invasive Plant Management Plan and Environmental Assessment* (National Park Service, Natural Resource Data Series, NPS/MWR/HTLN/NRDS) (2013).
  19. National Park Service, *Environmental Assessment for Resource Preservation and Visitor Interpretation of Bloody Hill at Wilson's Creek National Battlefield; Greene County, Missouri* (February 2014).

enhanced. The final 50 acres were designated an interpretive focus zone designed to accommodate interpretive programs, such as demonstrations, guided tours, and special events. The goals for interpretation enhancement included the protection of threatened plant species through installation of a boardwalk, the placing of new wayside exhibits and cannon, and improving site amenities at the site with construction of a shade shelter. Consideration was also paid to rendering the trail universally accessible, or alternately establishing a new accessible trail.

In April, the park completed a **Vegetation Management Implementation Plan**.<sup>20</sup> Twelve vegetation management treatments were indicated for various areas of the park. The treatments were based on the recommendations provided in the 2004 CLR.

Several construction projects were completed in 2014 that addressed the historic landscape and other areas visited by the public.

In March, **traffic signs** were replaced in the vicinity of the Visitor Center and along the Tour Road, while repairs made to the Visitor Center (PMIS project 161393). Building repairs entailed routing and sealing of 200 linear feet of cracks in the exterior of a concrete building wall and repair of spalling.

In addition to traffic signs, **new park entrance signage** was installed. The signs included two 14- by 64-inch park entrance signs and two 214- by 64-inch park identity signs. The new signs were fabricated from routed and painted western red cedar.

In July, projects involving the **cleaning of grave markers, installation of gutters on the Ray House, and repointing of the Ray springhouse** were completed (PMIS project 191946).

At the Ray springhouse, loose mortar was removed using hand tools. The stone work of the front and top of the building was then re-pointed using a historic lime mortar mix.

Grave markers at the Edgar Cemetery were cleaned; lichens were removed from masonry features using D2 Biological Solution. Natural or man-made fiber brushes were used in the process after spot tests were conducted to ensure the procedures did not result in damage to the stones.

At the Ray House, approximately 65 linear feet of guttering and two downspouts were installed in the rear of the building to help alleviate persistent problems with water damage. Midwest Region Historical Architect Al O'Bright had recommended adding gutters to this portion of the house to address water infiltration problems that had plagued park managers since the building was rehabilitated in 1983. The gutters were 5-inch half-round galvanized steel, and the downspouts 3-inch.

In September, **four bridges were repainted** (PMIS project 152058), including the Skeggs bridge railings, and three Gibson Mill Trail bridges.

In October, **siding, trim, and doors** were repaired in association with several park buildings (PMIS project 152129), including the Visitor Center.

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20. National Park Service, *Vegetation Management Implementation Plan* (Republic, Missouri: National Park Service, April 2014).

## 2015

In 2015, the Civil War Trust acquired a **20-acre parcel** (Tract 01-135) with the intention of transferring it to the federal government for inclusion within the park.

Three construction-related projects were completed within the park during 2015 that addressed the historic landscape and other areas visited by the public.

In July, the **sidewalks** were chip sealed (PMIS project 161388). Cracks in the asphalt were filled, and all sidewalks associated with the eight parking areas along the Tour Road were sealed with brown rock chips to match the existing pavement surface. Approximately 75 parking blocks were removed and replaced as part of the project.

In October, the **split rail fences** at the Visitor Center were replaced (PMIS project 161558). These fences define the entrance to the park and are the first thing the visitor sees when entering the park. The project entailed replacing a total of 2,400 oak split rails, comprising 1,078 linear feet of fence around the Visitor Center precinct. This fencing had last been replaced in 2006. The rails were stacked to a height of 3.5 feet, using 4 rails per segment. Nails were used sparingly to facilitate repairs after wind events. The removed rails were reutilized as firewood.

In July, **cracks in the road** were repaired (PMIS project 171583). The cracks were repaired along the 6 miles of the park's asphalt road and the asphalt parking areas. Repairs entailed application of hot rubberized asphalt to the cracks; broom sealing; and re-striping with 2 coats of latex traffic paint. The project was intended to maintain the value of this asset until the Federal Highway Administration incorporates the road into their pavement preservation program, planned for 2017.

## 2016

The park completed its first **Park Sign Inventory and Assessment**, a document that identifies all signs in the park and their locations.

Also completed was a **trail assessment** that provided key information for the park to use in improving trails.<sup>21</sup>

Six construction-related projects were completed within the park during 2016 that addressed the historic landscape and other areas visited by the public.

The recycled plastic **bike rack** was replaced with a powder-coated steel bike rack unit.

In May, **waterbars and ruts** were repaired on the Southwest Trail, while failing **split rail fencing** was replaced around the Sharp cornfield (PMIS project 161557). Along the Southwest Trail, waterbars are required on two steep sections of trail to ensure that water is directed off trail in order to prevent erosion. Existing waterbars had been compromised by regular use of the trail by shoed horses, coupled with several instances of heavy rainfall. In total, twenty-two waterbars were replaced or reworked and hardened to withstand horse traffic. The depth and angle of each waterbar was adjusted to direct drainage

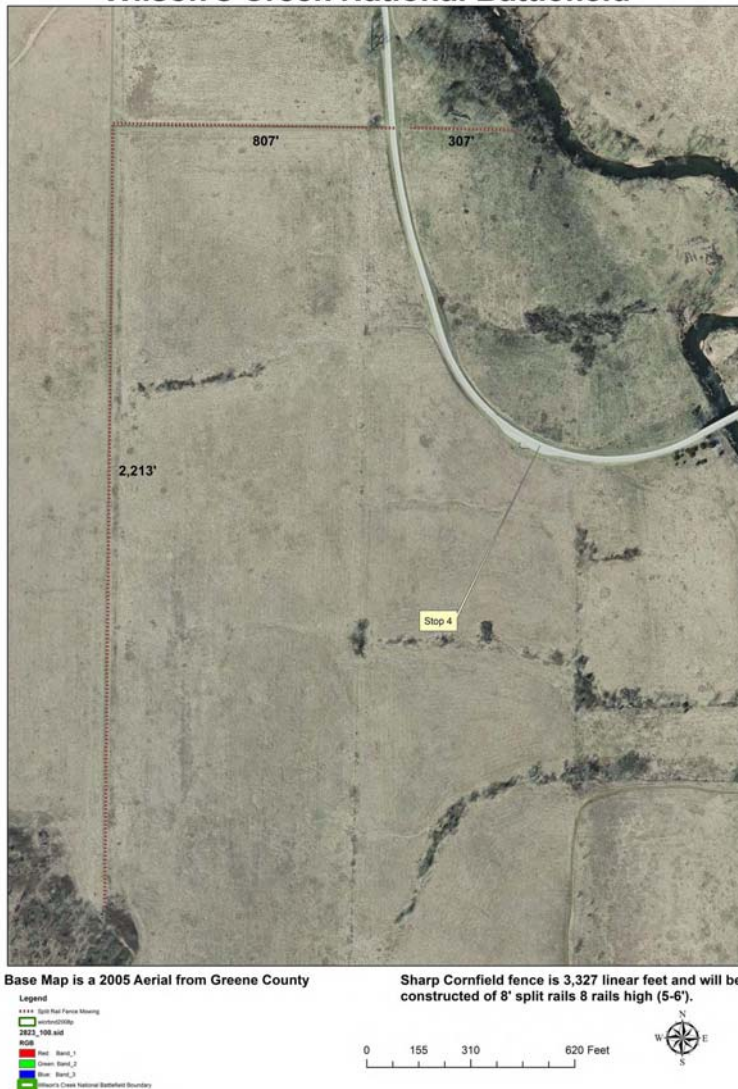
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21. Logan Park, *Assessment of Equestrian Recreation at Wilson's Creek National Battlefield: Final Report*. Developed through a cooperative agreement between the National Park Service and the Forest Recreation and Park Management, Department of Forestry, Southern Illinois University. (Carbondale, IL: Southern Illinois University. 2016).

off the trail. Each waterbar measures between 20 and 25 feet in length, is 24 inches wide, and 8 to 10 inches deep.

In addition, ruts were filled along approximately 5,000 linear feet of trail. The fill was a mixture of clay and crushed rock. Small waterbars were also constructed to divert water off trail.

### Replace Sharp Cornfield Fence Wilson's Creek National Battlefield



Map 2. Map illustrating the fencing replaced at the Sharp cornfield. (Source: Wilson's Creek National Battlefield)

At the **Sharp Cornfield**, approximately 3,306 linear feet of oak split rail fencing was demolished and replaced (Map 2). The new rails were installed using historic fence construction methods that incorporated the limited use of nails so repairs can be made more easily after storm events. The fence was indicated as a treatment recommendation in the 2004 CLR. It provides a critical reference for visitors to understand historic field patterns present during the Battle of Wilson's Creek. Split rails were last installed in 2005. Fence rails are considered to have a maximum life span of ten years.

In June, new exhibits were added at the Visitor Center (PMIS project 174798). The exhibits replaced older museum exhibit cases, enhanced security, and improved accessibility within the existing main gallery of the Visitor Center. A cohesive interpretive story was developed for the new exhibits that

1 incorporated the findings of current research and scholarship. The new exhibits offer multiple topical  
2 perspectives through the display of select artifacts and primary sources from the Civil War collection  
3 derived from acquisition of the Sweeny Museum.

4 In September, the **Edwards Cabin** was reroofed (PMIS project 152166).

5 **2017**

6 The park completed a Foundation Document as required by the Washington Support Office. This  
7 document provides basic guidance for planning and management decisions for the park.<sup>22</sup>  
8

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22. National Park Service, *Foundation Document • Wilson's Creek National Battlefield* (Republic, Missouri: National Park Service, January 2017).





Figure 4. View of park interpretation of the position of Backoff's Battery. (LSHLA)

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## Update to Chapter Three: Existing Conditions Documentation

### Introduction

This chapter provides information about the current physical character and composition of Wilson's Creek National Battlefield, focusing on changes that have occurred since the CLR was completed in 2004. Specific changes that can be attributed to park efforts to implement the CLR treatment plan are indicated as such. Wherever possible, photographs used in the 2004 CLR are compared with images taken in 2016 during field investigations conducted on behalf of the Environmental Assessment (EA) to illustrate the change.

The chapter is organized into three sections—park expansion, guidance afforded by the 2009 Long-Range Interpretive Plan, and physical changes by landscape characteristic.

### Park Expansion

At the time the CLR was completed in 2004, the park protected 1,749.91 acres of the historic battlefield landscape. Since 2004, the park itself has expanded by 280 acres and is now 2,029 acres in size, while an additional 172 acres of battlefield land have been placed under conservation easement. The easements serve to protect the land in perpetuity from development that would negatively impact the integrity of the battlefield.

## **Boundary Adjustment Act**

In 2004, Congress passed the Wilson's Creek National Battlefield Boundary Adjustment Act, which was signed into law by President George W. Bush. The Act revised the authorized boundary of the park to include "lands and interests therein consisting of six parcels totaling 615 acres."<sup>1</sup> Based on the legislation, land located within the expanded authorized boundary area are permitted to be added to the park through donation, from willing sellers with donated or appropriated funds, or by exchange.

The first land acquired by the park as a result of the legislation was the 19.84-acre parcel located to the north of the Visitor Center that contains General Sweeney's Museum, which occurred in 2005. The museum and associated notable collection of Civil War artifacts and memorabilia had been identified earlier as appropriate additions to the park for their potential to enhance interpretation. In 2006, three additional three totaling 157.03 acres were acquired along the southwestern edge of the park. These parcels contained the Civil War encampment site associated with Double Spring, which had been identified as a desirable addition to the park for its connection to the Battle of Wilson's Creek. Additional parcels totaling 42.39 acres were added west of Highway ZZ in 2008.

Between 2004 and 2006, nearby land owners agreed to establish conservation easements on land totaling 172 acres. The 2004 CLR recommended this approach as an alternative to fee simple land acquisition that would serve to protect battlefield resources outside of the park. The easements were developed with the assistance of the U.S. Department of Agriculture as part of their Farm and Ranch Lands Protection Program.<sup>2</sup>

Two additional parcels were added to the southeastern corner of the park in 2015 and 2016. These parcels total 60 acres.

As of 2017, an additional 13.97 acres of land have been acquired by private groups for future inclusion in the park. This land, however, lies outside of the current authorized park boundary. A second Congressional boundary expansion act will be required before this land can be transferred to the federal government.

Each of the land acquisitions and easements is described in more detail below.

### **General Sweeney's Museum**

In 2004, General Sweeney's Museum was a privately-run enterprise located along the park's northern boundary. The property also served as a residence for owners, Dr. and Mrs. Tom Sweeney. Dr. Sweeney established General Sweeney's Museum in order to exhibit his outstanding collection of Civil War artifacts and memorabilia. Dr. Sweeney is a descendant of Union Gen. Thomas Sweeney, who fought in the Battle of Wilson's Creek.

The park's 2003 General Management Plan established the framework for acquisition of the General Sweeney's Museum property by indicating it as a desirable addition to the park. As noted, the 19.84-acre Sweeney Museum parcel was acquired for inclusion in the park in 2005 following passage of the Wilson's Creek National Battlefield Boundary Adjustment Act in 2004.

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1. Public Law 108-394.

2. The Agricultural Act of 2014 established the Agricultural Conservation Easement Program, which replaced the Farm and Ranch Lands Protection Program.



As noted in a 2007 Amendment to the 2003 General Management Plan, following its acquisition,

This 20-acre site, which is north of the original national battlefield boundary, was included in the national battlefield to enhance the ability of the national battlefield to fulfill its mission to preserve and commemorate the Battle of Wilson's Creek. The primary goal was to acquire, preserve, and interpret the museum collections. This collection was determined to be one of the finest private Civil War collections in the United States. In addition to the collections, the site consists of the Civil War Museum building and other buildings. Portions of the Union columns marched across these lands on their way to attack the Confederate forces camped along Wilson's Creek.<sup>3</sup>

The addition of the museum's collection of Civil War material allowed the park to expand the story available to the visitor. As a result, the park's purpose statement was modified as documented in the 2007 General Management Plan to include interpretation of the battle within the context of the Civil War in the Trans-Mississippi West.<sup>4</sup>

### Southwest Additions

In 2006, the park also acquired three parcels totaling 157.03 acres near the southern boundary. One (Tract 01-126) measured 145.28 acres, and included land between the southern boundary and Old Limey Road as well as to the west of Highway ZZ. The other two (Tracts 01-127 and 01-128) together totaled 11.75 acres and were also located west of Highway ZZ near the park's southwestern corner. The land was initially acquired by the Wilson's Creek Battlefield Foundation, and subsequently donated to the federal government for inclusion in the park. These parcels all contain natural and cultural resources that can be tied to the Battle of Wilson's Creek. Troops of both sides are known to have camped on the land at different times. During the battle, the Southerners passed through this area.

Regarding the addition of these parcels, the 2007 General Management Plan Amendment noted that:

Preservation and interpretation of this area would enhance visitor understanding of the role that transportation played in the Battle of Wilson's Creek and the impact of the battle on the lives of civilians. The primary goal was to preserve and interpret the Wire and York Roads, Guinn farm site, and Double Spring.<sup>5</sup>

In 2008, six additional parcels totaling 42.39 acres were added west of Highway ZZ (Tracts 01-112, 01-0138, 01-139, 01-140, 01-141, and 01-142).

In total, the assembled lands west of Highway ZZ contain approximately 135 acres of fescue hayfields, two buildings and five building foundations, two cold water springs, a stream and riparian areas, and approximately 5 acres of limestone glade habitat. The park has conducted aquatic surveys within the stream; to date no federally listed species have been found.

In 2009, the Long-Range Interpretive Plan identified the southwest addition as a possible future Day-use Area where the Wire Road crosses Terrell Creek. The area was envisioned as featuring a modest picnic area,

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3. National Park Service, *Wilson's Creek National Battlefield General Management Plan Amendment/Environmental Assessment/Assessment of Effect for the Civil War Museum and Addition Lands* (July 2007), 3-4.
  4. National Park Service, *General Management Plan Amendment*, 3.
  5. National Park Service, *General Management Plan Amendment*, 4.

parking area, and wayside exhibits. Interpretation of the area was indicated as potentially focusing on use as a camp site by both armies.<sup>6</sup>

### Southeast Additions

In 2015, the Civil War Trust acquired a 20-acre parcel along the southeastern edge of the park (Tract 01-135). Later that year the federal government purchased the parcel from the Trust for inclusion within the park. In 2016, another 40 acres were acquired along the southeastern edge of the park by the Wilson's Creek Foundation and donated to the park (Tract 01-147).

### Future Land Acquisition

In order to initiate the process of boundary adjustment and expansion, parks are required to prepare a Land Acquisition Plan that identifies land areas of interest for their potential to support the mission of the park, including resource protection, interpretive goals, or administrative needs.

However, because land can only be acquired from willing sellers, expansion of a park's authorized boundary does not always result in acquisition of all parcels of interest. The 2004 Wilson's Creek National Battlefield Boundary Adjustment Act authorized the park's expansion by more than 600 acres. Although Wilson's Creek National Battlefield currently has funds available for land acquisition, much of the land remains in private ownership due to a lack of willing sellers.

### Conservation Easements

A total of 172 acres of battlefield land have been placed under conservation easement since 2004. The first easement was secured in 2004 for a 102-acre parcel. The second easement was secured in 2006 for a 70-acre parcel.

In 2008, conservation easements were secured for four other parcels located south of the park and Old Limey Road, as well as east of the park that edge the Greene-Christian County line to the north and south. *[acreage associated with these parcels will be added as part of future submissions]* As of 2017, additional conservation easements are in the process of being acquired for land located southeast of the park.

## Guidance Afforded by the 2009 Long-Range Interpretive Plan

As part of a broader effort to improve interpretation at Wilson's Creek National Battlefield, the park completed a Long-Range Interpretive Plan in 2009 in collaboration with the region and the Harpers Ferry Center.<sup>7</sup> The plan articulated and refined the interpretive goals outlined in the 2003 General Management Plan, as well as the 2007 General Management Plan Amendment, and also considered the treatment recommendations provided in the 2004 Cultural Landscape Report in developing a long-term strategy for enhancing park interpretation.

Several themes were identified in the plan that now serve as the foundation for park interpretive programs and media:

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6. National Park Service, Midwest Regional Office, Harpers Ferry Center Interpretive Planning, *Wilson's Creek National Battlefield Long-Range Interpretive Plan*. Republic, Missouri: National Park Service, June 2009.

7. National Park Service, *Long-Range Interpretive Plan*.

- Because Missouri was a western border state, social, economic, ethnic, and political differences fueled animosities between groups, ultimately leading to civil war.
- The strategic importance of Missouri and the personalities, decisions, and motivations of political and military leaders greatly influenced the military campaign and battle.
- Many interrelated factors leadership tactics weaponry landscape and terrain features and the use of volunteer forces contributed to the outcome of the battle and resulted in an unusually hard-fought and bloody military engagement.
- While the Unions battlefield defeat the death of General Lyon and the potential loss of southwest Missouri by Federal troops forced the North to reassess its commitment to the war in the Trans Mississippi the victory at Wilsons Creek gave hope and confidence to the South The residents along Wilsons Creek found themselves engulfed in the violence of battle and subjected to guerilla warfare and severe military policies that they resented long after the war ended.
- The preservation and commemoration of the battlefield reflects the desire of people to remember and honor the dedication to duty patriotism and personal sacrifices of our ancestors.<sup>8</sup>

The plan also recommends a series of actions anticipated to impact the park's cultural landscape:

- Prepare a sign master plan to address the need to replace outdated identity and orientation signs
- Provide bulletin boards at the following possible locations: 1) horse trailer parking; 2) overflow horse trailer parking; 3) rest area near the beverage machines; 4) picnic area.
- Establish a new Tour Road stop 1 near the Short Farm site to introduce visitors to the battle's opening combat action, and Lyon's objectives in attacking the Confederate camp. Include interpretation of how the battle impacted the lives of local residents.
- Change Tour Road stop 2 (Gibson's Mill) to Plummer's Crossing.
- Add wayside exhibits at Tour Road stop 3 that address the men serving in the Missouri State Guard near Wilson's Creek and the Edwards Cabin.
- Add a wayside exhibit at the east overlook that includes a map so that visitors can better understand battlefield terrain from this high point.
- Add a wayside exhibit at Tour Road stop 5 using an 1880s photo of Bloody Hill that illustrates the open nature of the terrain at the time of the battle, as compared with the contemporary wooded landscape.
- Add a wayside exhibit at Tour Road stop 6 focusing on the Confederate battle line. Incorporate a new trail system on Bloody Hill that follows the route traveled by the soldiers.
- Establish Tour Road stop 7 (Bloody Hill) as the most important stop for visitors. Include new trail alignments, wayside exhibits, interpretive panels, fixed artillery, and a shade shelter.

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8. National Park Service, *General Management Plan Amendment*, 7.

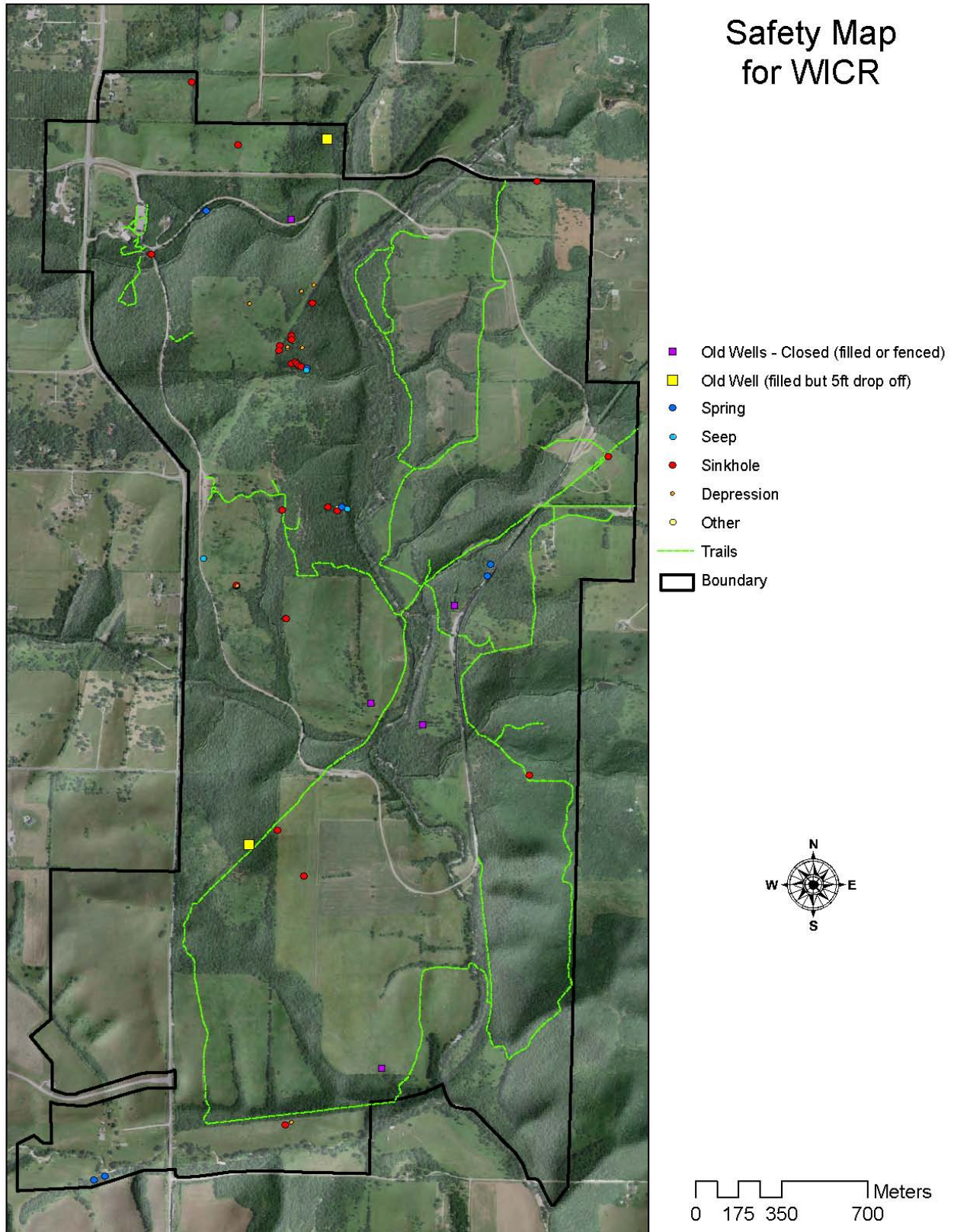
- 1 • Emphasize the withdrawal of Lyon's forces at Tour Road stop 8 (west overlook).
- 2 • Develop a trail plan that will create a trail network that allows visitors to walk the battle lines  
3 and better understand troop movements and the outcome of the battle.
- 4 • Improve the system with specific new segments that provide an interconnected system of  
5 trails, new upright orientation exhibits at each trailhead, and footbridges as needed to cross  
6 stream corridors. Specific trail recommendations include:
  - 7 ○ Add a short trail to interpret "Lyon's Approach" from the Visitor Center to the  
8 proposed new Tour Road stop 1. The trail should continue towards Bloody Hill,  
9 with a branch connecting to Plummer's Crossing site of Wilson's Creek. Provide a  
10 footbridge to cross the creek.
  - 11 ○ Add a trail from Wilson's Creek to approximate the route used by Plummer's  
12 battalion to reach the Ray Cornfield.
  - 13 ○ Add a trail and footbridge crossing of Skegg's Branch to provide access to the Wire  
14 Road and Edwards Cabin.
  - 15 ○ Reroute the Bloody Hill Trail away from Missouri bladderpod (*Physaria filiformis*)  
16 habitat.
  - 17 ○ Add a secondary spur trail to the Lyon marker.
  - 18 ○ Add a trail from Tour Road stop 6 to follow the route soldiers used to charge the hill.  
19 Include a segment from the Edwards Cabin that passes Bledsoe's Battery.
  - 20 ○ Add a trail along the route traveled by Sigel's column at the Sharp Farm site, and link  
21 Sigel's first, second, and last positions.
- 22 • Establish interpretive aids for visitors at the Ray House that include a visual aid to link the  
23 house with Bloody Hill, create footprint outlines of missing buildings behind the Ray House  
24 to help tell the family and hospital use story.
- 25 • Create a Day Use Area at Double Spring that features wayside exhibits and a picnic area.

26 The plan also identifies specific waysides indicated as already in the planning stages, such as one for  
27 the Edwards Cabin (PMIS 111917), and a new collection of waysides to be installed at Bloody Hill,  
28 while identifying cultural landscape treatments to be implemented in support of interpretation, such  
29 as clearing vegetation to open historic viewsheds and for scene restoration purposes.<sup>9</sup>

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9. National Park Service, *Long-Range Interpretive Plan*, 30–39.

## Physical Changes by Landscape Characteristic



Map 3. Map illustrating springs, sinkholes, and wells, and their proximity to park trails. (Source: Wilson's Creek National Battlefield)

## 1 Natural Features and Systems

2 **Wilson's Creek water quality.** At the time the CLR was completed, water quality associated with  
 3 Wilson's Creek was considered poor, with several unhealthful conditions indicated. Evaluation of the  
 4 water quality associated with Wilson's Creek in 2009 indicated that it remained poor. As part of the  
 5 evaluation, the Missouri Department of Natural Resources classified Wilson's Creek as a 303(d) stream.  
 6 Sampling conducted as part of the evaluation indicated problems with toxicity resulting from unknown  
 7 pollutants and bacteria introduced upstream at the City of Springfield from point sources such as a  
 8 wastewater treatment facility and non-point sources such as urban stormwater.

9 **Wilson's Creek watershed restoration.** The 2004 CLR provided several recommendations relating to  
 10 restoring the health of the Wilson's Creek watershed. The recommendations included stormwater BMPs  
 11 intended to minimize on-site and off-site hydrologic and water quality impacts due to run-off. Several of  
 12 the BMPs overlap with vegetation management recommendations discussed below, such as promoting  
 13 the health and diversity of native vegetation communities and adding filter strips along the margins of  
 14 paved and cultivated areas. The BMPs also included installation of features such as green roofs, bioswales,  
 15 filter strips, naturalized detention, rain gardens, vegetated swales, porous pavements, rain barrels, and  
 16 cisterns within into the park landscape. Recommendations for riverbank stabilization are also provided in  
 17 the 2004 CLR to address erosion and undercutting of banks. The park's plans for implementing the 2004  
 18 CLR recommendations are outlined in a 2014 *Vegetation Management Implementation Plan* prepared by  
 19 park personnel.<sup>10</sup> To date, recommendations related to restoration of the Wilson's Creek watershed have  
 20 not been implemented.

21 **Springs.** The water table within the Springfield area has been declining for several decades. The drop in  
 22 the water table is attributed to increased water use associated with development. Declines in the water  
 23 table have a direct impact on the flow of local springs, due to the way these water sources are fed by the  
 24 limestone geology. Springs that were described historically may no longer be active. The decline in the  
 25 water table is also expected to affect the amount of ground water available for plants.

26 The springs that the park monitors have been documented using Global Positioning System (GPS)  
 27 equipment and mapped with Geographic Information System (GIS) software. In 2004, based on input  
 28 from the park, six unnamed springs were documented within Wilson's Creek National Battlefield as part  
 29 of the CLR. The park now records a total of eight unnamed springs, and is aware of at least two additional  
 30 springs located within park caves. Four named springs are also documented as present within the park—  
 31 Rey (Ray), Pipeline, Skegg's, and Double Spring (map 3). Double Spring is located on land acquired by the  
 32 park since 2004. Further research is needed to track changes in spring flow over time, and to compare this  
 33 information with historic records to determine the impact that the declining water table is having on these  
 34 resources.

35 **Sinkholes.** Several sinkholes are present within the park (map 3). They are generally formed as a result of  
 36 changes in underlying geology. The park's limestone geology is subject to dissolution when exposed to  
 37 water that has become acidified. The lowering of the water table, and possible introduction of acidified  
 38 water, appears to have contributed to the presence of sinkholes within the park.

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10.





Figure 5. The Tour Road showing where rockwork was conducted in 2011. (LSHLA)

**Limestone rock outcroppings along the Tour Road.** A portion of the Tour Road follows the alignment of a former rail line. Construction of the line required leveling of the corridor using a combination of grading and blasting of rock. The rock outcropping visible between Tour Road stops 3 and 4 was exposed as part of the rail line construction. Inspection of the Tour Road conducted in May 2005 by Federal Highways Geotechnical personnel revealed that a portion of the rock outcropping was in danger of failing. To address the safety concerns associated with the assessment, the park completed emergency repair work in 2011, removing an overhanging section of rock that measured 14 feet in height, 401 feet in length, and 10 feet in width [fig. 5]. As part of the project a culvert associated with the road near where rock was removed was replaced.

## Responses to Natural Resources

**Abandoned residential wells.** Seven abandoned wells, only one of which was recorded in the 2004 CLR, are located within the park. Four of these wells were filled by the park in 2007 to address safety concerns and meet the requirements of Missouri state law (map 3).

**Ditches and gutters.** The Tour Road and other park roads are edged by ditches that convey stormwater away from the pavement and into streams and creeks. During the mid-2000s, the park determined that many of the ditches were functioning at a low level, contributing to problems with flooding of roadways in some locations. To address the problem, the park cleared silt and vegetation from several ditches associated with McElhaney Road, Farm Road 194, and the Ray House parking area and nearby sections of the Tour Road in 2009.

## Circulation

**Missouri Highway ZZ.** Since 2004, State Highway ZZ, which edges the park to the west, has been improved to accommodate the increase in traffic associated with construction of Republic High School to the north.



Figure 6. Tour Road c. 2000 (left) and 2016 (right), illustrating the change in paving material and reflectivity that has occurred as part of the implementation of the CLR treatment plan. (Source: Liz Sargent, left, LSHLA, right)

**Tour Road and Tour Stops.** In 2015, the highly reflective road surface of the Tour Road, indicated as problematic in the 2004 CLR, was repaved with an asphalt mix that contained 50 percent granite chips, resulting in a road that is far less visually intrusive (fig. 6).

**Wire Road.** In 2005, a washed out section of the Wire Road was repaired at the Schuyler Creek low water crossing, while ruts were filled to diminish potential trip hazards.

**Trails.** Several park trails were heavily impacted by tree removal operations that followed an ice storm in 2007. In 2008, repairs were made to trail drainage structures, bridges, and trail surfaces, while vegetation that was encroaching on the trails was removed. The trails undergoing repairs included the Southwest Trail, Jeff's Trail, Pulaski Trail, Guibor Trail, and East and West Overlook Trails, while the Nature Trail was repaired the following year.

In 2016, a condition assessment of all park trails was completed as part of a cooperative agreement with Southern Illinois University. The information provides a detailed understanding of trail segments that are in need of repair, including where erosion and other issues of concern are occurring. The park plans to use this information to reroute trail segments that repeatedly experience erosion and wash-outs.<sup>11</sup>



Figure 7. Bloody Hill Trail c. 2000 (left) and 2016 (right), illustrating improvements made to protect Missouri bladderpod habitat, and to enhance interpretation. (Source: Liz Sargent, left, LSHLA, right)

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11. Logan Park, *Assessment of Equestrian Recreation at Wilson's Creek National Battlefield*. Accomplished by a cooperative agreement with Forest Recreation and Park Management, Department of Forestry, Southern Illinois University (Carbondale, IL: Southern Illinois University, 2016).



**Bloody Hill Trail.** In 2012, several improvements were made to the trail system and interpretation at Bloody Hill. The trail was realigned to avoid sensitive Missouri bladderpod habitat, while wayside exhibits and cannon were added to support enhanced interpretation. As indicated in the 2004 CLR, a contemplative node was added near Tour Road stop 7 where visitors are able to consider the events of the battle with quiet reflection (fig. 7). The improvements were outlined in the 2009 Long-Range Interpretive Plan, with compliance to consider the potential impacts of the proposed changes to the historic landscape completed as part of an Environmental Assessment.<sup>12</sup>

**Manley Spur Trail.** The Manley Spur Trail, which appeared on park maps at the time the CLR was completed in 2004, has been closed and is no longer in use.

**Ray Cornfield Trail.** In 2006, the Ray Cornfield Trail was repaired through the filling of ruts, installation of waterbars, and removal of encroaching vegetation. Portions of the trail have been identified as problematic due to repeated evidence of erosion. The park has identified the need to reroute these problematic segments of the trail.

**Manley Trail** is the park's most popular equestrian trail. It provides access to two horse parking areas, the Wire Road, and the Manley Cemetery and farmstead site. The trail allows equestrian users to make a 5-mile loop through the park and return to the horse trailer parking area. In 2009, the trail was rehabilitated to fill ruts, spread aggregate, remove encroaching vegetation, and replace waterbars. Portions of this trail have been assessed as subject to repeated erosion. The park has identified the need to reroute problematic segments of the trail.

The **Southwest Trail** is a popular equestrian trail that provides access to the Wire Road and the Sharp Cornfield. The trail is part of the 5-mile loop used by equestrians within the park. The Southwest Trail is also part of the route followed by approximately 9,000 hikers and equestrians each year as part of the Missouri State Guard and Southern Civil War camp experience. It follows the route of one of the Union artillery's notable advances during the Battle of Wilson's Creek. In 2007, a tornado struck the park, uprooting and breaking hundreds of trees. The Southwest Trail was heavily impacted by the equipment used to remove the dead and damaged trees and debris after the tornado. The park worked to address safety concerns associated with the trail in 2009. Additional work was completed in 2016 to repair ruts and waterbars. Like the Ray Cornfield Trail and Manley Trail, the park has identified the need to reroute problematic segments of the trail that traverse two areas of steep slopes and are repeatedly subject to erosion.

**Jeff's Trail** provides the only trail connection between the Price Headquarters site, marked by Edwards Cabin, the Wire Road, and Bloody Hill. The trail was repaired in 2009 to address problems such as a loss of the gravel surfacing due to erosion, and the presence of trip hazards. Like the trails discussed above, portions of this trail have been assessed as subject to repeated erosion and the park would like to reroute the problematic sections.

The **Pulaski Trail** and overlook provides a view of the Price Headquarters site and access to a historic cannon battery site. The Pulaski overlook consists of a boardwalk with safety railings. Decking boards and safety rails require regular replacement to ensure visitor safety from trip and fall hazards. Portions of this trail have been assessed as subject to repeated erosion and are being considered for rerouting.

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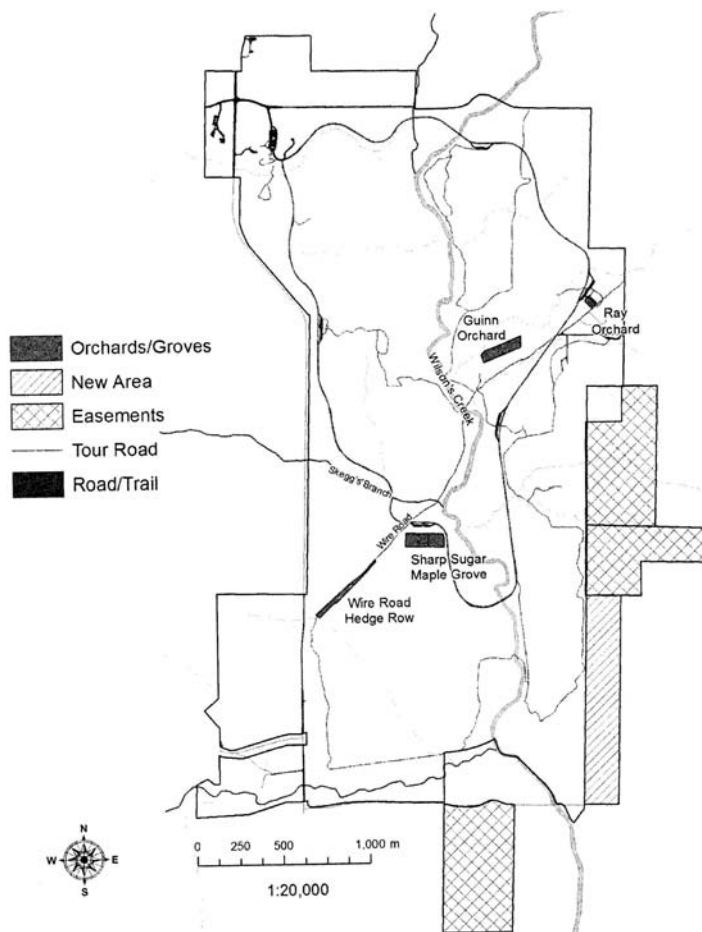
12. National Park Service, *Environmental Assessment for Resource Preservation and Visitor Interpretation of Bloody Hill at Wilson's Creek National Battlefield; Greene County, Missouri* (February 2014).

The **Guibor Trail** includes a short footpath and footbridge that originates at one of the Tour Road stop 6. It terminates at the historic location of Guibor's battery, marked by a cannon and an interpretive wayside. The footbridge requires the replacement of deteriorated decking boards and new paint. Portions of this trail have been assessed as subject to repeated erosion and are being considered for rerouting.

The **West Overlook** and **East Overlook trails** provide access to interpretive wayside exhibits and two of the best views of the battlefield within the park. The West Overlook Trail is experiencing erosion near the footbridge approaches and around tree roots. These problems can present tripping hazards for visitors. The trail needs to be repaired through the addition of fill at the bridge approaches and around tree roots. The East Overlook Trail is accessed via a footbridge and stairs. The wood decking is in need of replacement. Portions of this trail have been assessed as subject to repeated erosion and may need to be rerouted.

## Vegetation

### *Cultural Vegetation Features and Exhibits*



Map 4. Historic cultural vegetation as indicated in the 2014 Vegetation Management Implementation Plan. (Source: National Park Service)



Figure 8. Photographs of the front of the Ray House c. 2000 (left), and in 2016 (right) showing the orchard exhibit added in 2010. (Source: Liz Sargent, LSHLA)

**Orchard exhibits.** Based on a recommendations included in the 2004 CLR treatment plan, an orchard exhibit was planted at the Ray House in 2010 (fig. 8, map 4). Thirty trees were planted, including sixteen ‘Enterprise,’ seven ‘Gold Rush,’ and seven ‘Jona Free’ varieties. The trees were protected from deer browse using trunk guards.

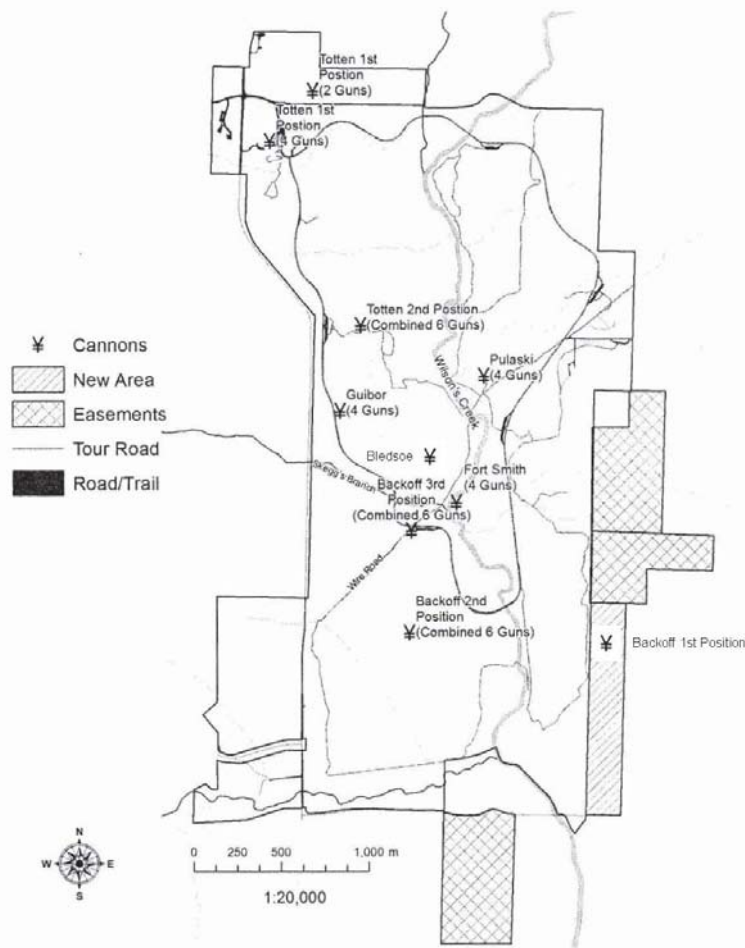
The CLR recommendation to plant an orchard at the Guinn Farm has not yet been implemented, but is discussed in the 2014 *Vegetation Management Implementation Plan* (map 4).<sup>13</sup>

**Crop exhibits.** Based on recommendations included in the CLR treatment plan, crop exhibits were planted in the Ray and Sharp cornfields. This treatment was also proposed for the Gibson oatfield. The recommendation has not yet been implemented.

**Wire Road hedgerow.** The 2004 CLR recommends that the Osage orange (*Maclura pomifera*) hedgerow that edges the Wire Road be retained and maintained. These features remain as documented in the 2004 CLR (map 4).

**Sharp sugar maple grove.** Similarly, the 2004 CLR recommends that the sugar maple (*Acer saccharum*) grove located near the Sharp Farm site (Tour Road stop 5) be retained and maintained. The grove remains as documented in the 2004 CLR (map 4).

13. *Vegetation Management Implementation Plan*, 43–44.



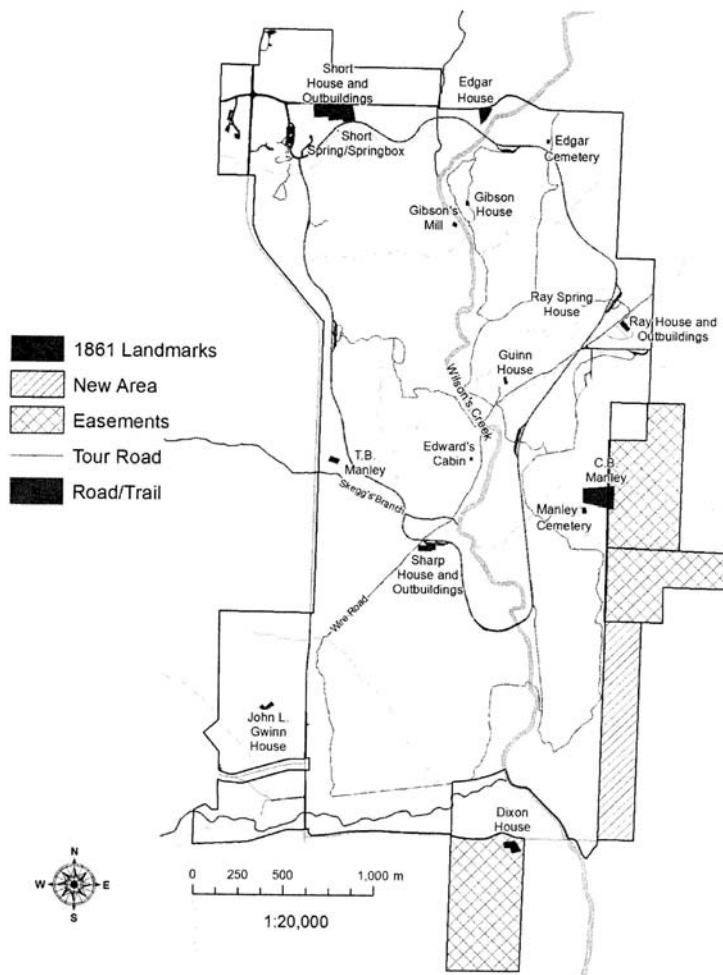
Map 5. Map illustrating cannon locations where clearing would be used to help visitors understand historic events associated with the Battle of Wilson's Creek. (Source: *Vegetation Management Implementation Plan*, 34, amended by LSHLA)

**Viewshed clearing.** The 2004 CLR recommends the reestablishment of critical views associated with the landscape at the time of the Battle of Wilson's Creek, particularly those that were important to the tactics and troop movements associated with the military event.

Since 2004, the park has focused viewshed maintenance and clearing on the east and west overlooks. Future work to address the CLR recommendations for viewshed clearing is articulated in the 2014 *Vegetation Management Implementation Plan*.<sup>14</sup> Actions indicated in the plan include clearing of views from observation points at the Ray House, east and west overlooks, and three vistas identified by the park as desirable—from the beginning of the Tour Road, from a point near Tour Road stop 3, and from the Manley Trail. Additionally, the plan suggests that sight lines be established at each cannon installation, including Backoff 1<sup>st</sup> position (2 guns), Backoff 2<sup>nd</sup> position (2 guns), Backoff 1<sup>st</sup> position (4 guns), Backoff 2<sup>nd</sup> position (combined 6 guns), Ft. Smith (4 guns), Bledsoe (3 guns), Guibor (4 guns), Pulaski (4 guns), Totten 1<sup>st</sup> position (2 guns), Totten 1<sup>st</sup> position (4 guns), and Totten 2<sup>nd</sup> position (combined 6 guns) (map 5).

Efforts to reestablish viewsheds would include removal of woody vegetation that obscures the desired view, and planting of native warm-season grasses that can be maintained through mowing.

14. *Vegetation Management Implementation Plan*, 31–37.



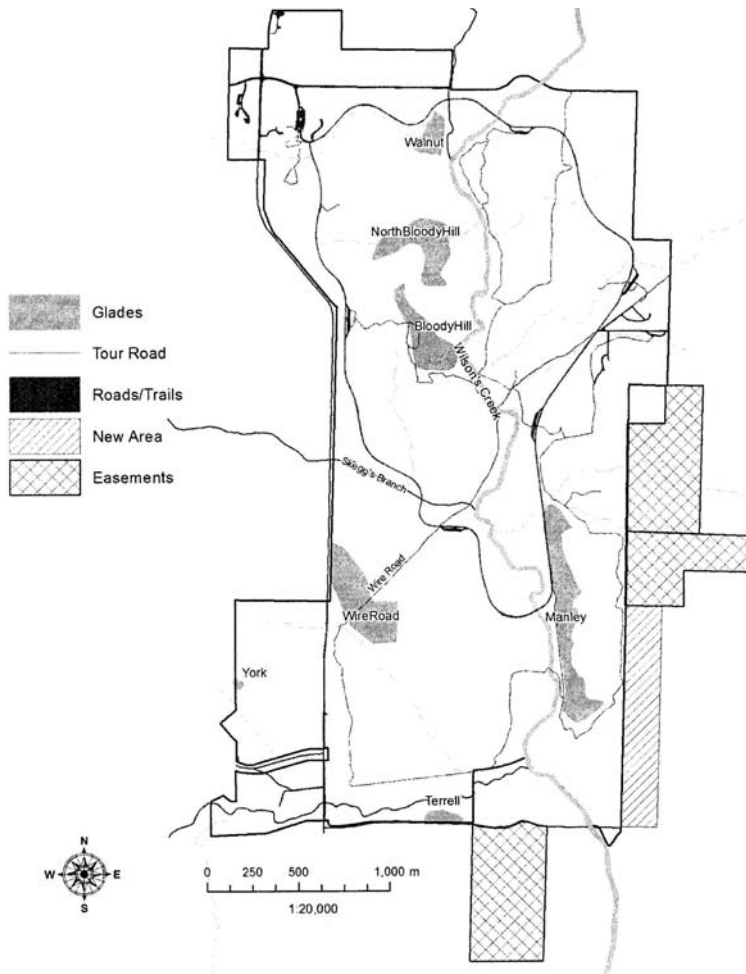
Map 6. House sites present in 1861. (Source: *Vegetation Management Implementation Plan*, 40)

**Farmstead interpretation.** Several farmsteads were present within the area encompassed by the park at the time of the Battle of Wilson's Creek. Currently only the Ray and Sharp houses and Gibson's Mill sites are interpreted. The 2004 CLR recommends that additional interpretation, potentially including visual aids such as foundation outlines, fencing, orchards, and outlines of fields, be implemented at additional house sites to enhance interpretation of the battlefield landscape. The house and farm sites that were the focus of this recommendation include the Short House and outbuilding, Short spring and springbox, Edgar House, Edgar Cemetery, Gibson House, L.D. Guinn House, T.B. Manley House, C.B. Manley House, J.L. Gwinn House, and Dixon House (map 6).

None of these farmsteads has yet been marked in this way, but future plans for implementation of this recommendation are included in the 2014 *Vegetation Management Implementation Plan*.<sup>15</sup>

15. *Vegetation Management Implementation Plan*, 38–39.

## Vegetation Community Management

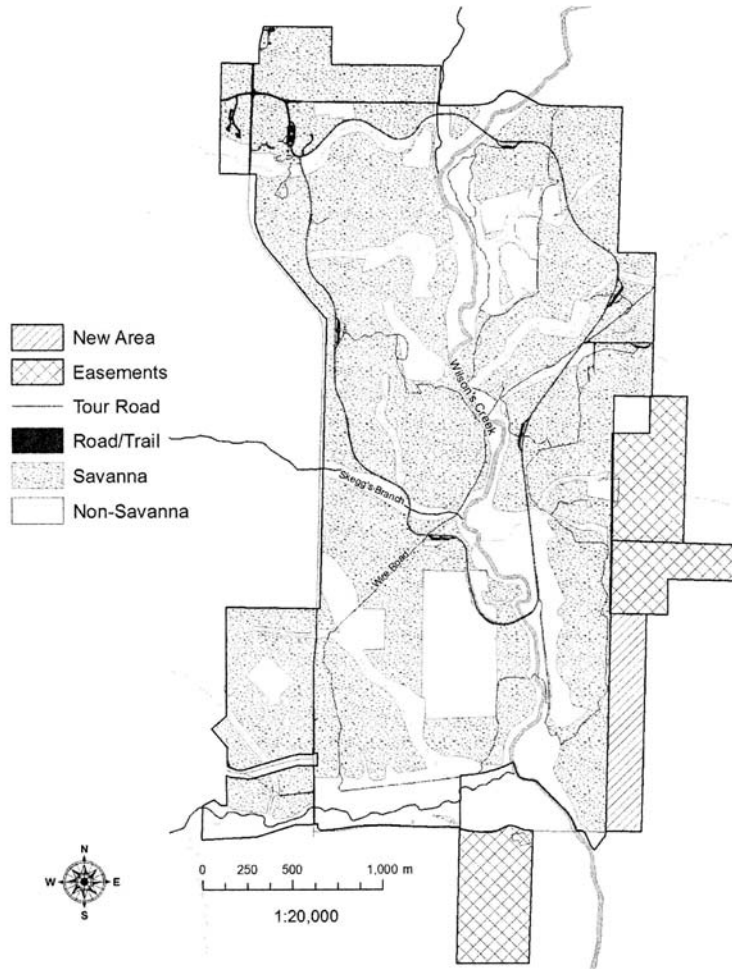


Map 7. Glade communities within Wilson's Creek National Battlefield. (Source: Vegetation Management Implementation Plan, 13)

**Glade communities.** The 2004 CLR developed specific recommendations for managing limestone glade habitat within the park. This rare habitat supports the Missouri bladderpod, a federally-listed endangered plant species. Without the introduction of fire, which helps to remove encroaching species such as Eastern redcedar (*Juniperus virginiana*) trees, the habitat degrades and cannot support the needs of the Missouri bladderpod. Limestone glades are also very sensitive to disturbance and compaction. Glade habitat is present on Bloody Hill, including the area where the Lyon marker is located. The 2004 CLR indicated a need to both relocate visitors from the sensitive areas of Bloody Hill, as well as managing the habitat to promote the needs of the bladderpod using mechanical clearing as well as prescribed fire to remove Eastern redcedar trees and other undesirable plants.

Following the publication of the CLR in 2004, the park conducted mechanical removal of several Eastern redcedar trees on Bloody Hill within glade habitat. These efforts ended in 2006, and little follow-up tree removal has occurred. The 2014 *Vegetation Management Implementation Plan* indicates that the park plans to continue implementing the CLR recommendations for managing glade habitat both at Bloody Hill and elsewhere. The areas where treatments are anticipated to occur include Bloody Hill (15.94 acres), Manley Woods (29.9 acres), North Bloody Hill (12.29 acres), Terrell Creek (2.72 acres), Walnut (6.12 acres), Wire Road (25.2 acres), and York (0.5 acres) (map 7). Actions anticipated to occur include:

- Removal of Eastern redcedar trees outside of the Missouri bladderpod growing season
- Removal of all non-native vegetation and control invasive species
- Seeding with native grasses
- Introduction of regular prescribed fire burns as fuel loads permit or every five years before fall germination of the Missouri bladderpod<sup>16</sup>



Map 8. Proposed savanna restoration areas within Wilson's Creek National Battlefield. (Source: Vegetation Management Implementation Plan, 17)

**Savanna and open mixed forest communities.** The 2004 CLR recommends that much of the park landscape be managed to promote savanna plant communities similar to what was present at the time of the Civil War Battle of Wilson's Creek. Savannas are composed of native grasslands and open grown trees, primarily oaks, maintained through regular fire. The Wilson's Creek landscape included both savanna and areas of denser open mixed forest. Restoration of both vegetation types requires the removal of advantageous tree species that are present today, but were not an important part of the historic forest. Many of these have grown up as a result of fire suppression. The CLR provided recommendations for

16. *Vegetation Management Implementation Plan*, 11–14. While this is a goal, it is recognized that it will be difficult to achieve.

managing for savanna and open mixed forest communities using a combination of mechanical removal, prescribed fire, planting of desirable species, and invasives control. The park has begun to implement this recommendation by introducing a more regular regime of prescribed fire to larger areas of the park since 2004.

Future plans, articulated in the 2014 *Vegetation Management Implementation Plan*, include implantation of the CLR recommendations over approximately 1,222.38 acres of the park (map 8). Implementation is anticipated to be coordinated with related projects, such as glade community management, establishment of riparian buffers and filter strips, and reestablishment of critical viewsheds. Specific tasks associated with implementation of the management strategy include:

- Removal of specific native tree species that were not historically part of the landscape (such as Eastern redcedar, honeylocust (*Gleditsia triacanthos*), Siberian elm (*Ulmus pumila*), American elm (*Ulmus americana*), red elm (*Ulmus rubra*), wild black cherry (*Prunus serotina*), hackberry (*Celtis occidentalis*), black walnut (*Juglans nigra*), and red mulberry (*Morus rubra*).
- Promotion of other tree species, particularly oaks, and protect them by removing encroaching vegetation
- Regular use of prescribed fire
- Replacement of non-native cool-season grasses with native warm-season grasses and forbs<sup>17</sup>

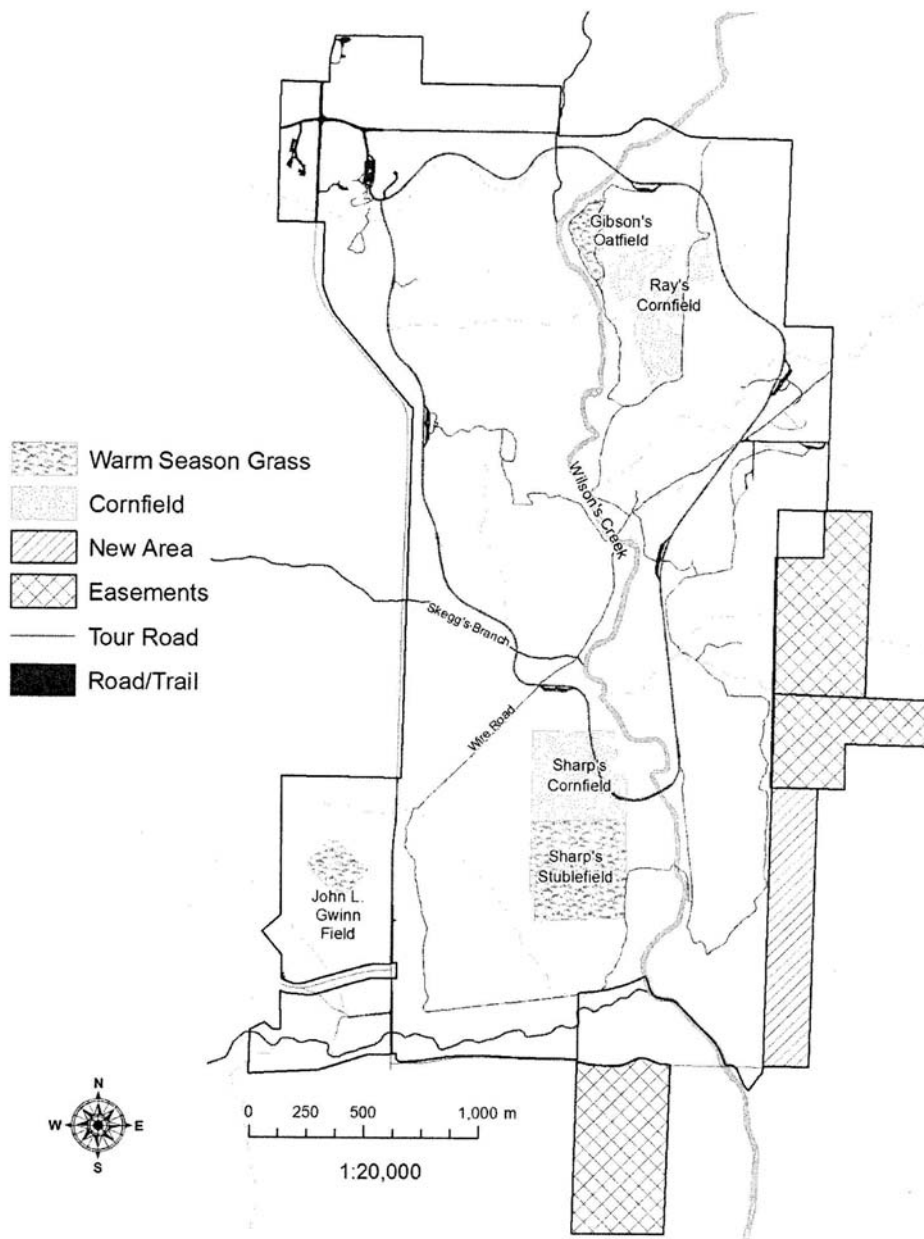
**Manley woods.** The 2004 CLR recommends that the high quality mature forest associated with Manley woods be maintained through control of invasive species and other undesirable conditions, such as soil erosion and crowding of mature trees by fast growing species resulting from fire suppression. This recommendation has not yet been implemented by the park.

**Prairie.** A native prairie was planted in the environs of the Visitor Center during the 1990s. The 2004 CLR recommends that this feature be treated similar to the recommendations for native warm-season grass and forb fields. The park has made few interventions in the prairie since 2004. It is maintained through periodic mowing.

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17. *Vegetation Management Implementation Plan*, 15–21.

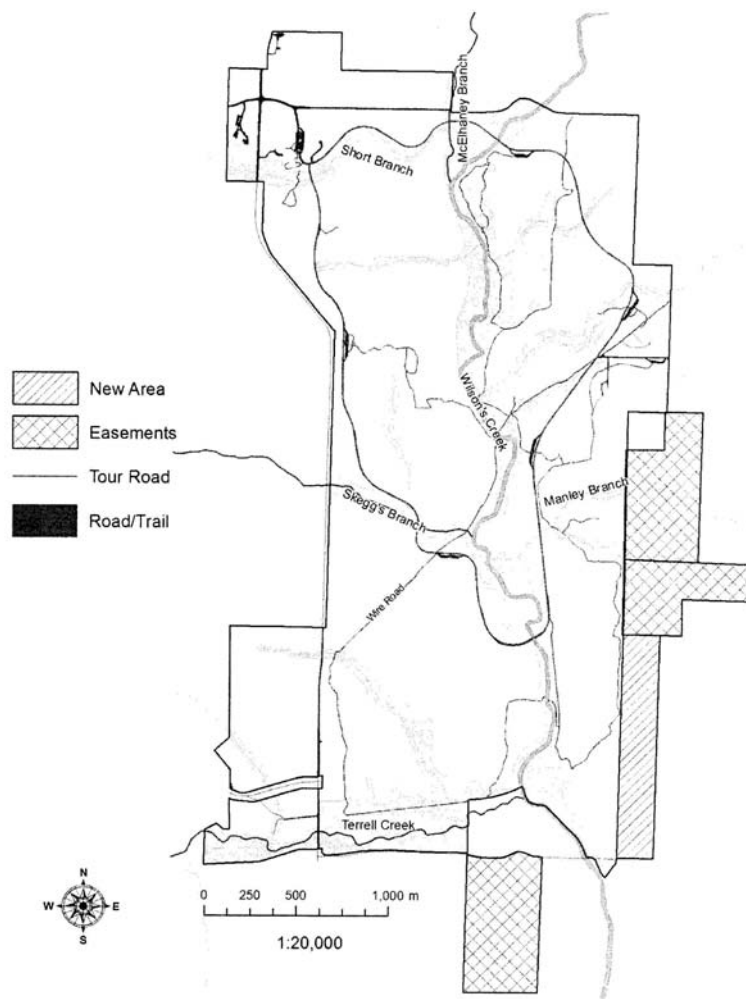




Map 9. Fields present at the time of the battle, and proposed vegetation management approaches.. (Source: Vegetation Management Implementation Plan, 24)

**Native warm-season grass fields.** The 2004 CLR recommended that portions of the historic crop fields be converted from fescue to native warm-season grass fields to improve habitat and reduce the presence of non-native plant species. The warm-season grass fields would support interpret the spatial patterns associated with historic crop fields for interpretive purposes, but would require less labor to maintain than crop field exhibits. It does not appear that this recommendation has as of yet been acted upon. The 2014 *Vegetation Management Implementation Plan* indicates that the areas planned for this treatment include the Sharp stubblefield (43.73 acres), Gibson oatfield (8.27 acres), and Gwinn field (9.09 acres) (map 9).<sup>18</sup>

18. *Vegetation Management Implementation Plan*, 22–26.



Map 10. Map showing the locations of riparian stream buffers to be established at Wilson's Creek National Battlefield. (Source: 2014 Vegetation Management Implementation Plan)

**Riparian stream buffers.** The 2004 CLR included recommendations for the establishment of riparian buffers along all stream corridors as a measure intended to protect water quality by filtering overland run-off and pollutants. To date, this recommendation has not been implemented. The 2014 *Vegetation Management Implementation Plan* indicates the protocols and locations where this recommendation will be implemented in the future. Buffers will be established along Manley Branch (7.9 acres), McElhaney Branch (6.42 acres), Shorts Branch (28.41 acres), and the main stem of Skegg's Branch (17.54 acres), Terrell Creek (84 acres), and Wilson's Creek (184.58 acres) (map 10).<sup>19</sup>

**Filter strips.** The 2004 CLR recommends that the park establish filter strips along paved roads, parking areas, and waterways, drainages, and slopes that edge open areas managed as crop fields. Filter strips are intended to filter and clean sediment, organic material, chemicals, and other materials from stormwater run-off before it reaches an open waterway. This recommendation has been partially implemented around exhibits of row crop agriculture, such as at the Ray cornfield. They have not yet been established in many of the other areas where recommended. The April 2014 *Vegetation Management Implementation Plan* provides a detailed discussion of the goals associated with filter strip establishment, including the fact that they constitute a BMP for reducing run-off of some agricultural non-point source contaminants

19. *Vegetation Management Implementation Plan*, 5–10.

1 and are part of an overall program of land conservation. Additional filter strips are indicated as needed  
 2 around parking areas, the Tour Road and Tour Road pull-offs, equestrian parking and staging areas,  
 3 waterways, drainages, and slopes that edge open areas where crop field or historic vegetation exhibits are  
 4 implemented.<sup>20</sup>

5 **Invasives control.** The 2004 CLR recommended that the park update its invasive species control plan in  
 6 order to complement the other recommendations regarding restoration of the historic scence through  
 7 vegetation management. The park continues to address invasive species through several methods,  
 8 including mechanical clearing (mowing), chemical treatments, and prescribed fire.

9 In 2013, the Heartland Inventory and Monitoring Network, based at Wilson’s Creek, prepared the  
 10 *Heartland Invasive Plant Management Plan and Environmental Assessment*. This plan is not specific to  
 11 Wilson’s Creek, but addresses invasive species control for a wider area of the Midwest. It is currently  
 12 being used to guide invasive species control at Wilson’s Creek National Battlefield. The 2014 *Vegetation*  
 13 *Management Implementation Plan* indicates that “invasive species control is very complex, so treatment  
 14 will be addressed partly in the *Heartland Invasive Plant Management Plan and Environmental Assessment*.  
 15 However, it is imperative that a well-developed invasive species control plan specific to Wilson’s Creek  
 16 National Battlefield be an integral part of future [vegetation management programs at the park].”<sup>21</sup>

17 It is anticipated that protocols for invasive species control will continue to evolve. It is possible that  
 18 grazing animals, such as goats, may be employed in the future to address stands of invasive species in areas  
 19 that are difficult to access with equipment and machinery.

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20. *Vegetation Management Implementation Plan*, 28–29.

21. *Vegetation Management Implementation Plan*, 27–28.



Map 11. Current and proposed future burn units within Wilson's Creek National Battlefield. (Source: Wilson's Creek National Battlefield)

**Prescribed Fire.** Many of the vegetation communities are managed using prescribed fire. A fire management plan prepared in December 2004 identified burn units that coincided with the recommendations in the CLR. The burn units are in the process of being updated to reflect more up-to-date mapping capabilities and knowledge of vegetation communities. The current and proposed future burn units are indicated in map 11.<sup>22</sup>

<sup>22</sup> Wilson's Creek National Battlefield, *Environmental Assessment Wilson's Creek National Battlefield Fire Management Plan* (Republic, Missouri: National Park Service, December 2004).



## BUILDINGS AND STRUCTURES



*Figure 9. The Ray House c. 2000 (left) and 2016 (right) illustrating the character of the structure following several repairs. (Source: Liz Sargent, LSHLA)*

**Ray House.** The Ray House, built circa 1852, is the oldest standing structure, and the most significant, in the park. Several structural and preservation maintenance projects have been completed at the Ray House since 2004 (fig. 9). The Ray House has been repainted twice since the CLR was completed, first in 2004, and again in 2009. In 2006, the roof was replaced. The work generally entailed in kind replacement, although zinc roofing strips were added to prevent moss buildup, and new lightning rods were installed. At the same time, the fire suppression system was upgraded. In 2007, portions of the porch were repaired or rebuilt, while the door was repaired and corner trim boards were replaced. In 2013, the Ray House foundation was repointed, and the roof was again replaced. Gutters were installed in the rear in 2014.



*Figure 10. Ray springhouse c. 2000 (left) and 2016 (right) illustrating changes to the trail providing access to the structure, and work that has been done to address preservation of the structure. (Source: Liz Sargent, LSHLA)*

**Ray springhouse.** The Ray springhouse was originally constructed circa 1855. The park first conducted preservation repairs and rehabilitation on the structure in 1986. In 2009, the limestone masonry was repointed using an appropriate mortar mixture. As part of the project, missing stones were replaced with stone from a local quarry and matched as closely as possible to the original in terms of color.

In 2006, drainage associated with the Ray springhouse was improved through the addition of two culverts to convey the flow of an adjacent spring beneath the path leading to the structure. The culvert replaced former use of a boardwalk present at the time the CLR was completed (fig. 10).



Figure 11. Edwards Cabin c. 2000 (left) and 2016 (right) following rehabilitation of the structure for interpretive purposes. (Source: Liz Sargent, LSHLA)

**Edwards Cabin.** In 2005, the mothballed structure referred to as the Edwards Cabin, which had been moved to the park in 1965 to mark the location of a cabin present during the war used by General Price as his headquarters, was rehabilitated for interpretive purposes. From the cabin, views are afforded of Bloody Hill, making it an important focus of battle interpretation. The rehabilitation project entailed taking the cabin apart; digging and placing footings; installing roof trusses, a framework, and shingling the structure; replacing several support logs; and reassembling the log structure. Finish work entailed chinking and white washing the logs; installing windows and doors; constructing a porch, fireplace, and chimney; plastering the interior; constructing a floor; and fabricating two new doors, steps, and a ramp. A wooden hitching post and wayside exhibit were also added nearby for visitors. The roof was replaced in 2016 (fig. 11).

**House on General Sweeney Museum property.** The “Sweeney” residence, which measures 8,000 square feet, was built circa 1890 in Springfield. Key aspects of the original structure—doors, walnut paneling, stair cases, and floors—were moved to its current location in 1964 after it was threatened by demolition as part of the expansion of Cox Hospital. The owner, O.K. Armstrong, sold the house to Dr. Thomas and Mrs. Karen Sweeney in 1988. The Sweeneys are known to have replaced the asphalt roof, propane furnaces and air conditioners, and expanded the house through construction of an addition during their period of ownership. They established a museum in the house in 1991.

**McElhaney Farm complex.** Several projects have been conducted to repair and rehabilitate structures associated with the McElhaney Farm complex. The **McElhaney House**, which is used for law enforcement, resource management, and interpretive offices, was rehabilitated in 2010 to address structural deficiencies. The fire suppression system had been previously upgraded in 2006. The **McElhaney barn** required emergency stabilization involving repair and replacement of sills, support beams, and exterior siding, and correction of drainage problems that included installation of a culvert. In 2011, bracing was installed to prevent the structure from failing, while three failing wooden windows were replaced in 2012. The **McElhaney smokehouse** was rehabilitated in 2005. Work included painting, roof replacement, and replacement of the doors and windows. The windows were replaced in 2013. The **McElhaney well house** was completely re-built in 2010 to upgrade the water supply and storage system and ensure that the restrooms and potable water supply to the McElhaney House was protected following a Public Health Department assessment. Cracks in the **McElhaney storm cellar** were repaired in 2006 to allow for use as a tornado shelter.





Figure 12. Visitor Center c. 2000 (left) and 2016 (right) after expansion. (Source: Liz Sargent, LSHLA)

**Visitor Center expansion.** The park's Visitor Center was expanded through construction of a new library addition. Although dedicated in April 2003, the addition post-dated the documentation phase of the 2004 CLR and was not recorded therein. The core of the library collection was donated by Springfield attorney, John K. Hulston, and his wife Ruth Hulston. The addition includes a large conference room (fig. 12).

**Tour Road bridges.** In 2013, the Tour Road bridges were repaired to address deficiencies identified in a Federal Highways bridge inspection of 2006, and resulting from flooding that occurred in 2008. Debris lodged behind the bridge abutments was removed, and erosion problems were repaired.

**Trail bridges.** All of the trail bridges within the park are contemporary features; many were built in the 1980s. Several bridges have undergone repairs since 2004, including sanding and repainting, and minimal replacement of materials as needed. Examples include those associated with Skegg's Branch, the Gibson Mill Trail, and the Wire Road.

In 2005, the wood stringers, decking, and runners associated with the **Wire Road bridge** were replaced based on deterioration noted in a Federal highways inspection. Work was again completed to replace deteriorated wooden structural members associated with the bridge in 2012. Stringers, decking, and the steel substructure of the bridge were again identified as requiring repair during Federal Highways bridge inspections conducted in 2010. In 2013, the Wire Road bridge underwent additional repairs that included the provision of rip rap along the banks of Wilson's Creek, replacement of broken and deformed safety cables, adjustment of a stringer bracket, and removal of encroaching vegetation.



Figure 13. Picnic area c. 2000 (left) and 2016 (right) indicating the changes that have been made to the retaining wall and railing. (Source: Liz Sargent)

**Picnic area structures.** In 2010, the picnic area retaining walls and safety railings were replaced. The creosote treated railroad ties that formed the wall as documented in 2004 were replaced with a concrete interlocking retaining wall system. The wooden safety railing was replaced with galvanized steel railing and fencing (fig. 13).

**Split rail fencing at the park entrance and Visitor Center.** Split rail fencing was replaced in the vicinity of the visitor center in 2006. The project entailed construction of 1,300 linear feet of 4-rail-high split rail fencing. The split rail fencing at the Visitor Center was replaced again in 2015.



*Figure 14. Split rail fencing at Sharp cornfield, 2016. (Source: LSHLA)*

**Split rail fencing, Ray cornfield, Sharp fields.** Split rail fencing edges the Ray and Sharp cornfields. These fields were described in battle accounts, and are an important interpretive feature of the park. Historic split rail fencing conveys the feeling of the landscape at the time of the battle. These fences were replaced in 2005 as well as 2016 (fig. 14). As part of the project, approximately 3,306 linear feet of oak split rail fencing was demolished and new rails installed using historic fence construction methods. As part of the project, the park avoided using nails both to convey an authentic historic appearance and to facilitate repairs following storm events. The fencing was discussed as a key interpretive feature in the CLR.



## SMALL-SCALE FEATURES



Figure 15. Park entrance sign c. 2000 (left), and as replaced in 2014 (right). (Source: Liz Sargent, LSHLA)

**Park entrance sign.** A new park entrance sign was built near the entrance to the park along Farm Road 182 in 2014. The sign measures 214 by 64 inches. It includes a wooden panel constructed of double-sided western red cedar with routed graphics, a painted finish, western red cedar arrowhead, and c-channel steel mounting. The new sign was set atop the stone base associated with the previous entrance sign (fig. 15).



Figure 16. Gates at the park entrance 2016. (Source: LSHLA)

**Gates at park entrance and fee collection site.** The park entrance gates were replaced in 2009. The new wooden gates were incorporated into the stone pier system along with a photovoltaic arrowhead sign located to either side of the entrance gate (fig. 16).



Figure 17. Wayside exhibit on Bloody Hill, 2016. (Source: LSHLA)

**Wayside exhibits.** Fourteen new wayside exhibits were added along the Bloody Hill Trail in 2012 based on the recommendations provided in the Long-Range Interpretive Plan and an Environmental Assessment prepared for proposed improvements. Additional waysides are planned for future installation in association with the site of the DuBois Battery position (fig. 17).

**Lyon marker.** The Lyon marker is located within the area that has been improved through the addition of new wayside exhibits. The character of the area where the marker is located has been altered since 2004 with the addition of the new wayside exhibits as well as split rail fencing that edges the trail to the marker. The fencing is designed to protect the sensitive glade habitat around the marker from access by visitors.

**Benches.** In 2006, four benches near the Visitor Center were replaced with recycled plastic seating intended to reduce maintenance costs.

Several wooden benches located along the park's trail system were sanded and painted in 2008.

**Picnic tables and benches.** In 2008, 33 wooden picnic tables and 7 benches were added to the picnic area, replacing 26 wooden tables and 7 wooden benches that had been present in 2004, but were in poor condition. The new picnic furniture is fabricated from recycled plastic. It is designed to be universally accessible.

**Bike racks.** All five bike racks associated with the Tour Road were replaced in 2010. Wooden racks were replaced with recycled plastic racks.

**Hitching rails.** Hitching rails, present in 2004, have been removed from several Tour Road stops. These features were likely removed as part of the tour stop upgrade projects conducted in 2010. Bollards remain in place and were stained in 2010.





Figure 18. Wheelstops associated with Tour Road parking c. 2000 (left) and 2016 (right) illustrating changes that have been made to the paving and parking spaces. (Source: Liz Sargent, LSHLA)

**Wheelstops.** The wheelstops present in association with the tour stop parking areas in 2004 were replaced with 127 recycled rubber features in 2010 (fig. 18).

**Cannon.** New cannon were proposed as an interpretive aid in the 2009 Long-Range Interpretive Plan. Several cannon were added along the rehabilitated Bloody Hill Trail in conjunction with the new wayside exhibits in 2012.

**Grave markers.** Grave markers in the Edgar Cemetery were the focus of a cleaning project in 2014.

## UTILITIES



Figure 19. KAMO overhead electrical transmission lines c. 2000 (left) and 2016 (right) showing the replacement of the poles and lines. (Source: Liz Sargent)

**Overhead electric transmission line.** The KAMO overhead transmission line that extended through the park as part of a utility easement as noted in the 2004 CLR has since been replaced with a higher voltage line. The 2004 CLR noted that the line was scheduled to be removed or relocated in support of restoration of the park's historic viewshed. The proposed relocation was found to be more visually intrusive since the new alignment would have crossed the Visitor Center area and part of Bloody Hill. To avoid this visual intrusion, the line was instead upgraded using higher voltage lines. The wooden poles present in 2004 were replaced with a weathering steel in the same locations by KAMO in c. 2003–2004. An archeologist conducted shovel tests for the project, which was reviewed by the Missouri State Historic Preservation Office for compliance (fig. 19).





Figure 20. View across the Sharp stubblefield from Tour Road stop 4. (Source: LSHLA)

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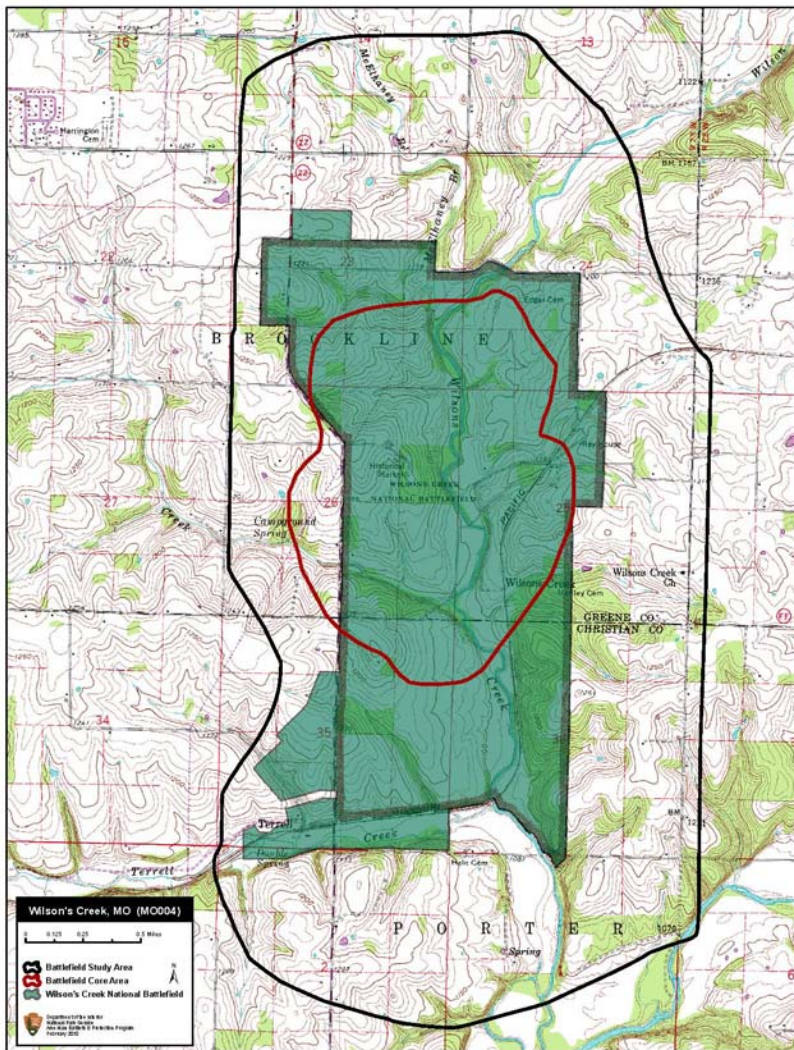
## Update to Chapter Four: Analysis and Evaluation

### National Register of Historic Places Status

As noted in the 2004 CLR, Wilson's Creek National Battlefield was administratively listed in the National Register of Historic Places (NRHP) in 1966 based on passage of the National Historic Preservation Act. National Register documentation was prepared for the park in 1976, after which the nomination was signed and accepted by the Missouri State Historic Preservation Office and the Washington office of the NRHP.

Since preparation of the 1976 nomination, new scholarship has emerged to indicate that the landscape area associated with the Battle of Wilson's Creek is more extensive than originally thought, suggesting that the National Register nomination should be amended to include a boundary expansion. The 2011 Update to the Civil War Sites Advisory Commission *Report on the Nation's Civil War Battlefields* for Missouri reinforces this suggestion, indicating a larger study area for the Battle of Wilson's Creek, in addition to a National Register eligible property extending over the same expanded area. Should the property listing be amended, the boundary would expand from the currently listed area of 1749.49 acres to approximately 5,109 acres, as shown on the map below (map 12). Much of the area indicated as eligible for listing in the NRHP is in private ownership. The park in its entirety falls within the area indicated as National Register-eligible.





Map 12. ABPP map for the 2011 update to the Civil War Sites Advisory Commission Report on the Nation's Civil War Battlefields prepared for the state of Missouri. (Source: American Battlefield Protection Program)

## Civil War Sites Advisory Commission Report Update

Wilson's Creek was identified in the original 1993 *Civil War Sites Advisory Commission Report on the Nation's Civil War Battlefields* as a priority III battlefield, suggesting a need for additional protection of battlefield lands. In 2011, an update of the study was prepared for battlefields in the state of Missouri. The 2011 report indicates the battlefield study area to extend over an area that measures approximately 5,109.74 acres, and surrounds a core area that measures 1,021.26 acres.<sup>1</sup>

The updated study suggests that Wilson's Creek, one of seven Missouri battlefields currently listed in the NRHP, should be considered for a National Register nomination boundary expansion to recognize the 3,300 acres of battlefield land that fall outside of the National Park Service unit and current NRHP documentation.<sup>2</sup>

1. The core area is generally defined as where combat and other battle actions took place, while the study area is where battle-related actions, such as encampment and transportation, occurred.
2. National Park Service, *Update to the Civil War Sites Advisory Commission Report on the Nation's Civil War Battlefields; State of Missouri* (Washington, D.C.: American Battlefield Protection Program, March 2011), 15.

The 2011 study suggests a total of 2,968,48 acres remain undeveloped within the Wilson’s Creek study area and may retain sufficient integrity to convey historic battle associations in support of a boundary expansion.<sup>3</sup>

## **National Register Nomination Update and Boundary Adjustment**

The National Park Service has already commissioned a NRHP nomination update that will propose inclusion of the 2011 study area as part of the expanded boundary of the property.

The nomination is also likely to consider the park’s acquisition of the General Sweeny’s Museum artifact and memorabilia collection and its inclusion in the park’s museum collection. Today, the

Artifacts and archival records in Wilson’s Creek National Battlefield’s museum collections represent a nationally prominent and comprehensive documentation of the Civil War in the Trans-Mississippi West.<sup>4</sup>

## **Comparative Analysis**

The comparative analysis of historic and existing landscape conditions conveyed in the 2004 CLR remains current and up-to-date, including the identification of contributing, non-contributing, and missing resources. Some of the non-contributing features described in 2004 have, however, since been replaced with other non-contributing resources. Site furnishing, parking features, and picnic area features are among the non-contributing resources that have been replaced. Additionally, new wayside exhibits and cannon have been added to enhance interpretation at Bloody Hill that also constitute non-contributing features.

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3. *Update to the Civil War Sites Advisory Commission Report*, 24–25.

4. National Park Service, *Wilson’s Creek National Battlefield General Management Plan Amendment/Environmental Assessment/Assessment of Effect for the Civil War Museum and Addition Lands* (July 2007), 4.





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# Updated References

- 1 Annis, Gust M., Michael D. DeBacker, David D. Diamond, Lee F. Elliott, Aaron J. Garringer, Phillip A.  
2 Hanberry, Kevin M. James, Ronnie D. Lee, Michael E. Morey, Dyanna L. Pursell, and Craig C. Young.  
3 *Wilson's Creek National Battlefield Natural Resource Condition Assessment*. Natural Resource Report  
4 NPS/HTLN/NRR-2011/427. Fort Collins, Colorado: National Park Service, Natural Resource  
5 Stewardship and Science, July 2011.
- 6 Bowles, David E. *Aquatic Invertebrate Monitoring at Wilson's Creek National Battlefield; 1996–2010 Status and*  
7 *Trend Report*. Natural Resource Technical Report NPS/HTLN/NRTR—2013/754. Fort Collins,  
8 Colorado: National Park Service, Natural Resource Stewardship and Science, June 2013.
- 9 \_\_\_\_\_. *Aquatic Invertebrate Monitoring at Wilson's Creek National Battlefield; 2005–2007 Trend Report*.  
10 Natural Resource Technical Report NPS/HTLN/NRTR—2010/287. Fort Collins, Colorado: National  
11 Park Service, Natural Resource Stewardship and Science, February 2010.
- 12 Cribbs, J. Tyler and David G. Peitz. *White-tailed deer monitoring at Wilson's Creek National Battlefield,*  
13 *Missouri: 2008 Status Report*. Natural Resource Technical Report NPS/HTLN/NRTR—2008/102.  
14 Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, April 2008.
- 15 \_\_\_\_\_. *White-tailed deer monitoring at Wilson's Creek National Battlefield, Missouri: 2007 Status Report*.  
16 Natural Resource Technical Report NPS/HTLN/NRTR—2007/027. NPS D-77. Fort Collins,  
17 Colorado: National Park Service, Natural Resource Stewardship and Science, March 2007.
- 18 Cribbs, J. Tyler, Lloyd W. Morrison, and Craig C. Young. *Missouri Bladderpod Habitat Relationships on Bloody*  
19 *Hill Glade at Wilson's Creek National Battlefield*. Natural Resource Technical Report  
20 NPS/HTLN/NRTR—2007/062. Fort Collins, Colorado: National Park Service, Natural Resource  
21 Stewardship and Science, November 2007.
- 22 DeBacker, Mike. DRAFT. *Baseline Plant Community Monitoring Report, Wilson's Creek National Battlefield*.  
23 Republic, Missouri: Wilson's Creek National Battlefield, Prairie Cluster Long-term Ecological  
24 Monitoring Program, November 2001.
- 25 Diamond, David D., Lee F. Elliott, Michael D. DeBacker, Kevin M. James, Dyanna L. Pursell, and Alicia  
26 Struckhoff. *Vegetation Classification and Mapping of Wilson's Creek National Battlefield Project Report*.  
27 USGS-NPS Vegetation Mapping Program. Fort Collins, Colorado: National Park Service, Natural  
28 Resource Stewardship and Science, April 2013.
- 29 John Milner Associates. *Wilson's Creek National Battlefield Cultural Landscape Report*. 2004.
- 30 Leis, Sherry. "Prescribed Fire Monitoring Report; WICR; Units in Core West and Core East." 2008.

- \_\_\_\_\_. "Prescribed Fire Monitoring Report; WICR; Units in Core East and Manley Woods." 2009.
- \_\_\_\_\_. "Prescribed Fire Monitoring Report; Wilson's Creek National Battlefield." 29 September 2010.
- Leis, Sherry A. and Kevin James. *Effects of multiple intense disturbances at Manley Woods, Wilson's Creek National Battlefield*. Natural Resource Technical Report NPS/HTLN/NRTR—2008/123. Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, November 2008.
- \_\_\_\_\_. *Effects of multiple intense disturbances at Manley Woods, Wilson's Creek National Battlefield*. Natural Resource Technical Report NPS/HTLN/NRTR—2008/123. Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, November 2008.
- Leis, Sherry A. and Christopher M. Kopek. *Prescribed Fire Monitoring Report Wilson's Creek National Battlefield, 2011*. Natural Resource Data Series NPS/WICR/NRDS—2011/213. Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, December 2001.
- Leis, Sherry and Sarah Hinman. "Prescribed Fire Monitoring Report; Wilson's Creek National Battlefield." March 2015.
- Middlemis-Brown, Sherry A. and Craig C. Young. *Heartland Invasive Plant Management Plan and Environmental Assessment*. National Park Service, Natural Resource Data Series, NPS/MWR/HTLN/NRDS. 2013.
- Mlekush, Karola E. *Chinquapin Oaks on Bloody Hill, Wilson's Creek National Battlefield, Missouri*. Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, April 2011.
- Mlekush, Karola E. and Kevin M. James. *Vegetation Community Monitoring at Wilson's Creek National Battlefield, Missouri; 2008–2011*. Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, January 2012.
- National Park Service. *Environmental Assessment for Resource Preservation and Visitor Interpretation of Bloody Hill at Wilson's Creek National Battlefield; Greene County, Missouri*. February 2014.
- \_\_\_\_\_. *Foundation Document Wilson's Creek National Battlefield Missouri*. August 2016. (F7 draft)
- \_\_\_\_\_. Wilson's Creek National Battlefield FY 2005 Superintendent's Annual Narrative Report. 2005.
- \_\_\_\_\_. *Update to the Civil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. State of Missouri*. Washington, D.C.: American Battlefield Protection Program, March 2011.
- \_\_\_\_\_. "Wilson's Creek National Battlefield Burn History." Map.
- \_\_\_\_\_. *Wilson's Creek National Battlefield General Management Plan Amendment / Environmental Assessment / Assessment of Effect for the Civil War Museum and Addition Lands*. Republic, Missouri: Wilson's Creek National Battlefield, July 2007.
- Park, Logan. *Assessment of Equestrian Recreation at Wilson's Creek National Battlefield*. Accomplished by a cooperative agreement with Forest Recreation and Park Management, Department of Forestry, Southern Illinois University. Carbondale, Illinois: Southern Illinois University, Department of Forestry, 2016.

- Peitz, David G. *Bird Monitoring at Wilson's Creek National Battlefield, Missouri; 2008 Status Report*. Natural Resource Technical Report NPS/HTLN/NRTR—2009/195. Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, April 2009.
- \_\_\_\_\_. *Bird Community Monitoring at Wilson's Creek National Battlefield, Missouri Status Report*. Natural Resource Technical Report NPS/HTLN/NRTR—2013/726. Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, April 2013.
- \_\_\_\_\_. *White-tailed deer monitoring at Wilson's Creek National Battlefield, Missouri: 2005–2006 Status Report*. Natural Resource Technical Report NPS/HTLN/NRTR—2006/016; NPS D-80. Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, May 2006.
- Wilson's Creek National Battlefield. *Environmental Assessment Wilson's Creek National Battlefield Fire Management Plan*. Republic, Missouri: National Park Service, December 2004.
- \_\_\_\_\_. *Environmental Assessment for Resource Preservation and Visitor Interpretation of Bloody Hill at Wilson's Creek National Battlefield, Greene County, Missouri*. Republic, Missouri: National Park Service, February 2014.
- \_\_\_\_\_. *Foundation Document • Wilson's Creek National Battlefield*. Republic, Missouri: National Park Service, January 2017.
- \_\_\_\_\_. "New Gates and Maintenance Area Paving." Drawing No. 410/80445. 8 sheets. June 2008.
- \_\_\_\_\_. Project Management Information System project details.
- \_\_\_\_\_. *Sign Inventory and Assessment*. (September 2016).
- \_\_\_\_\_. *Vegetation Management Implementation Plan*. Republic, Missouri: National Park Service, April 2014.
- \_\_\_\_\_. *Wilson's Creek National Battlefield – FY 2005 Business Plan*. 2006.
- \_\_\_\_\_. Midwest Regional Office, Harpers Ferry Center Interpretive Planning. *Wilson's Creek National Battlefield Long-Range Interpretive Plan*. Republic, Missouri: National Park Service, June 2009.
- Young, Craig C., Dr. Lloyd W. Morrison, and Holly J. Etheridge. *Missouri Bladderpod Population Size and Initial Habitat Assessment for the Bloody Hill Glade Population at Wilson's Creek National Battlefield*. Natural Resource Technical Report NPS/HTLN/NRTR—2006/017. NPS D-79. Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, November 2006.
- Young, Craig C. and Jennifer L. Haack. *Missouri Bladderpod Status Report for Six Populations at Wilson's Creek National Battlefield*. Natural Resource Technical Report NPS/HTLN/NRTR—2007/031. Fort Collins, Colorado: National Park Service, Natural Resource Stewardship and Science, July 2007.

