

STATE
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February 2009



HARPERS FERRY
NATIONAL HISTORICAL PARK

A Resource Assessment



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

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Center for State of the Parks®

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

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

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

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

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

- * More than 340,000 members
- * 25 regional and field offices
- * More than 120,000 activists

A special note of appreciation goes to those whose generous grants and donations made this report possible: Dorothy Canter, Ben and Ruth Hammett, MSST Foundation, and anonymous donors.

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COVER PHOTO: Harpers Ferry National Historical Park as seen from Bolivar Heights. Photo courtesy of the National Park Service. INSET: Joy Oakes



INTRODUCTION



Few places in the United States have seen more history than Harpers Ferry National Historical Park. The park is situated at the confluence of the Shenandoah and Potomac Rivers and is part of three states: West Virginia, Maryland, and Virginia. The town of Harpers Ferry was a rural hamlet up until the early 1800s when it quickly grew into a bustling industrial area following the construction of a federal armory there. The Chesapeake and Ohio Canal opened

in 1833 and the Baltimore and Ohio Railroad line began servicing Harpers Ferry the following year, which further fueled industrial development and turned the town into a transportation hub. John Brown targeted the federal armory and arsenal at Harpers Ferry for his raid to forward the abolition movement in 1859. The town changed hands eight times during the Civil War, a testament to the area's strategic importance. Other historic events that occurred

The Lower Town district of Harpers Ferry, West Virginia, was the stage for several events that determined the course of American history.



CATHERINE NORRIS

at Harpers Ferry include Meriwether Lewis's 1803 visit to purchase weapons and other hardware from the armory for his cross-country expedition, the largest surrender of Union troops during the American Civil War, the establishment of one of the earliest integrated colleges in the United States, and the second conference of the Niagara Movement.

After years of lobbying by residents, Congress officially recognized Harpers Ferry as

a nationally significant area in 1944, establishing Harpers Ferry National Monument. This bill set aside the park as "a national public memorial commemorating historical events." Since it was established, the park has grown in size via land purchases, private and public land donations, and exchanges of federal lands. Congress changed the park's name to Harpers Ferry National Historical Park in 1963 to "more accurately represent the site's evolution." Today Harpers Ferry's authorized boundary includes about 3,745 acres of important cultural sites and diverse habitats, including hardwood forests, historic town lands, open and agricultural fields, wetlands and riparian areas, archaeological sites, historic structures, and cultural landscapes. Three other national parks pass through Harpers Ferry: a section of the Appalachian National Scenic Trail, Chesapeake and Ohio Canal National Historical Park, and the Potomac Heritage National Scenic Trail.

The park's wealth of cultural resources includes the federal armory's fire engine and guard house that is now known as John

Brown's Fort. It was within this building that John Brown and his men sought shelter during their failed raid in 1859. Most of the other armory buildings, which supplied arms and metalwork to a host of clients that included Meriwether Lewis and the Corps of Discovery, did not survive the Civil War. The ruins of many of them now lie buried beneath 1890s railroad track embankments. Another important historic structure is the Lockwood House, an early government building that later became home to Storer College, one of the nation's first integrated colleges.

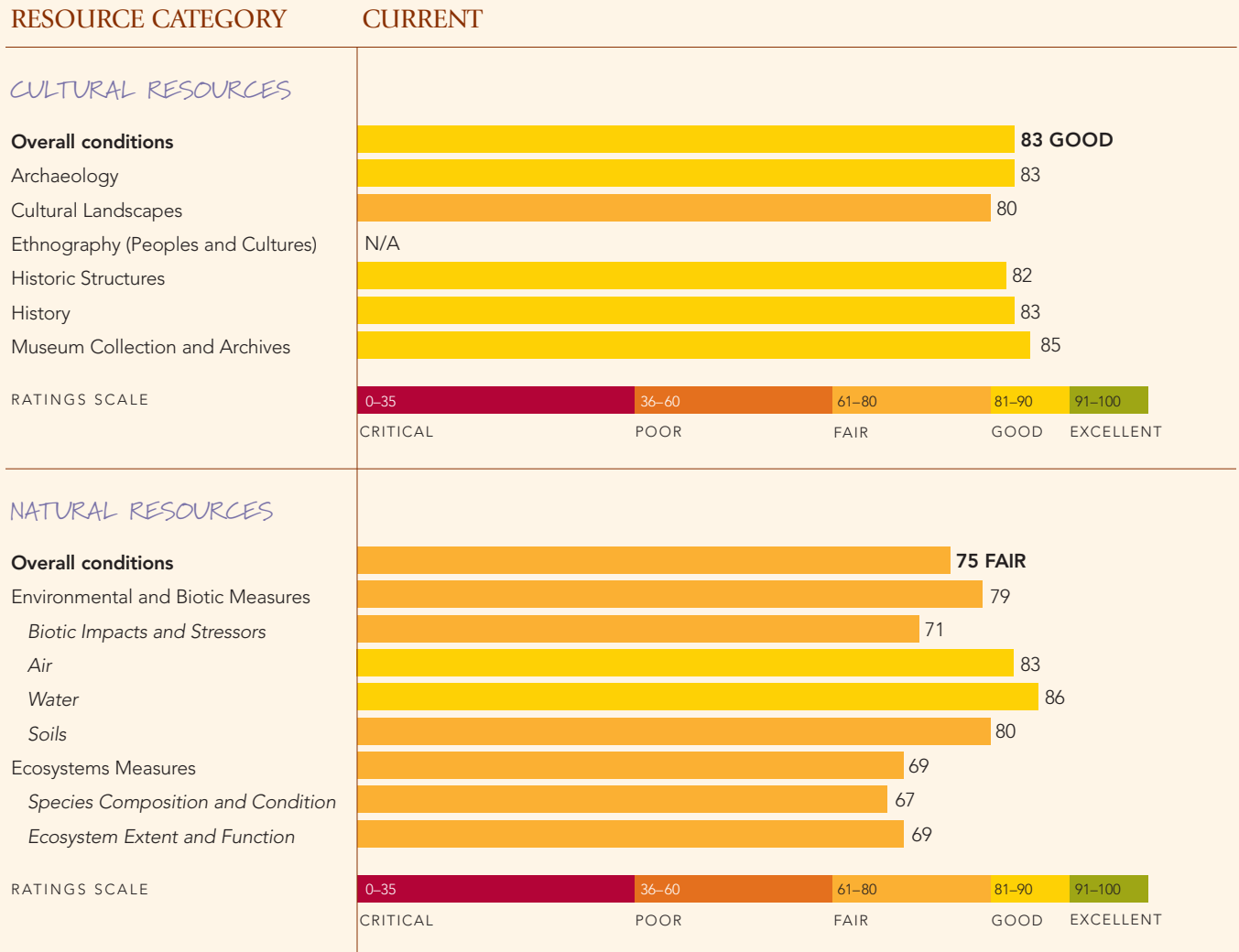
The park's cultural landscapes include the early industrial center of Virginius Island, Camp Hill, the Lower Town district, and the battlefield where Confederate and Union troops squared off in 1862, ending with the largest Union surrender of the war. The park's museum and archives are extensive and contain items such as the John Brown family Bible; original weapons and equipment made in or used at Harpers Ferry; Storer College library books; and period industrial equipment and tools.

Harpers Ferry National Historical Park also preserves important natural resources that include several dozen species of state-listed rare or endangered plants, such as limestone adder's-tongue (*Ophioglossum engelmannii*), fringleaf wild petunia (*Reullia humilis*), and broadleaf ironweed (*Vernonia glauca*)—which are all found within the park's limestone red-cedar glade ecosystems. The park also features historic views from Jefferson Rock and from the cliffs on Maryland and Loudoun Heights. Thomas Jefferson visited the rock outcropping that now bears his name in 1783, observing that the view was "stupendous and worth a voyage across the Atlantic." Today Jefferson Rock is one of the park's most recognized and visited natural historic resources. Park staff work with local officials, conservation groups, and other stakeholders to preserve from development the scenic views from Jefferson Rock and other vantage points.

HARPERS FERRY NATIONAL HISTORICAL PARK AT A GLANCE

- **Location:** Parklands fall within West Virginia, Maryland, and Virginia, at the confluence of the Shenandoah and Potomac Rivers.
- **Year of establishment:** 1944
- **Park size:** Authorized boundary encompasses 3,745 acres; about 3,645 are currently federally owned and under Park Service jurisdiction.
- **Annual number of visitors:** 249,908 in 2007
- **Premier cultural resources:** Harpers Ferry National Historical Park preserves landscapes that include the Civil War battlefield and the historic Lower Town area; numerous historic structures, including John Brown's Fort and the Lockwood House; and a variety of museum artifacts relating to the town's early industrial period, John Brown's Raid, the Civil War, and the area's African-American history.
- **Special natural resources:** Harpers Ferry hosts rare plant and animal species as well as uncommon vegetative habitats (i.e., limestone red-cedar glades and low-elevation montane forests). The park's limestone red-cedar glades are small, consisting of two parcels of less than an acre in size, and four areas, approximately 10 acres total, that have the potential to be restored to this habitat type. The park's other rare plant habitats are the low-elevation montane forests anchored by eastern hemlock trees.
- **Recreational activities:** Visitors to Harpers Ferry National Historical Park may tour the park on guided ranger walks, hike some of the park's 18 miles of trails, view more than 150 historic structures, and learn more about the history of the area via interpretive waysides and exhibits. Local lodging, restaurants, and shops serve park visitors and provide for their needs.

Note: When interpreting the scores for resource conditions, recognize that critical information upon which the ratings are based is not always available. This limits data interpretation to some extent. For Harpers Ferry National Historical Park, 100 percent of the cultural resource information was available and 72 percent of the information required by the natural resource methodology was available.



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

RATINGS

In recognition of the important historical and natural resources protected within Harpers Ferry National Historical Park, the National Parks Conservation Association's Center for State of the Parks conducted an assessment to determine current conditions of the park's resources. The scores for cultural resources are based on the results of indicator questions that reflect the National Park Service's own *Cultural Resource Management Guideline* and other policies related to cultural and historical resources. Ratings for natural resources were assigned through an evaluation of park research and monitoring data. See the "Appendix" for more information on NPCA's Center for State of the Parks comprehensive assessment methodology.

Based on the Center for State of the Parks assessment, overall conditions of the park's known **cultural resources** rated a "good" score of 83 out of 100. Harpers Ferry's cultural resources received the highest score of the 56

parks NPCA has assessed to date; just one other park assessed by the Center for State of the Parks has received this same score for cultural resource conditions (Andrew Johnson National Historic Site in Tennessee). Overall, Harpers Ferry's cultural resources are well protected and well interpreted. Challenges to the park's cultural resources include a lack of adequate on-site storage for the museum collection and archives; a need for archaeological surveys, cultural landscape documentation, and historic resource studies; and an overall lack of funding and staff.

Current overall conditions of Harpers Ferry's **natural resources** rated a "fair" score of 75 out of 100. Natural resource concerns include incompatible adjacent land development; non-native invasive plant species within park habitats; steep slopes susceptible to erosion and failure; and forest damage from diseases and pests.



MARSHA WASSEL/NATIONAL PARK SERVICE

Harpers Ferry National Historical Park's cultural landscapes include Civil War battlefields that preserve natural resources and offer visitors the opportunity to walk in the footsteps of soldiers. School House Ridge (pictured) was Stonewall Jackson's main battle line during the 1862 Battle of Harpers Ferry.

KEY FINDINGS

- Adjacent land use concerns are a top priority for the park. The area surrounding the park is rapidly developing and this construction threatens the park's historical viewscape, impacts ecosystems along park borders, and affects the park's ability to interpret 19th-century historical events. A 2004 boundary expansion allowed the park to acquire key adjacent lands. The park has also negotiated conservation easements, but several priority areas remain outside the park's boundary and are at risk of inappropriate development. These efforts to preserve viewsheds and protect ecosystems consume a large portion of the natural resource staff's time and funding.
- Harpers Ferry National Historical Park suffers from an overall lack of cultural and natural resource staff. The cultural landscape division and archaeology program each consist of just one staff member, and the park's entire natural resources program has only one full-time employee. The park's business plan recommends the addition of nine full-time cultural resource employees and nine full-time natural resource employees. Harpers Ferry has also recently been unable to fill staff positions, including several maintenance positions and a full-time park ranger position, due to funding shortfalls. A geographic information systems position has been unfilled since 2001. It has been re-listed as a lands management assistant and will soon be filled. This position will help the park address internal management responsibilities and external lands issues.
- According to the park's business plan, the facility management division is understaffed by 15.5 positions. In many cases, this has resulted in the bare minimum of services for staff and visitors. The number and complexity of the park's historic resources, and the recent acquisition of new areas such as School House Ridge South, result in a large workload and not enough staff. The park has obtained funds to restore many structures, but without an adequately funded facility management division, the restored structures deteriorate and the investment made in them is not maximized.
- Rare plant populations at Harpers Ferry are among the park's most significant natural resources. Several researchers have recommended monitoring of the rare plants, particularly the state-listed species and those colonies threatened by invasive species, but the park lacks the funds needed to do this work. Some of the rare plant species represent the only recorded local populations of those plants. Aggressive invasive plants are among the most serious threats to rare and sensitive plant populations, particularly in edge communities (e.g., along railroads, canals, trails, and highways).
- Harpers Ferry's cultural resources need further documentation, including archaeological surveys, cultural landscape studies (especially in recently acquired parklands), and historic resource studies. To date, archaeologists have surveyed about 40 percent of the park's total acreage for archaeological resources; just two of the park's 15 identified cultural landscapes have been documented through cultural landscape reports; and newly acquired parts of the park, such as School House Ridge South and Murphy Farm, need to be further explored through historic resource studies. These surveys and studies will provide park staff with more complete

information about the park's resources, helping them better protect those resources and interpret them for visitors.

- Immigrants made up a large part of the workforce at Harpers Ferry's armory during the early 19th century, yet little is known about them. A social history study would provide insight into their lives and allow for more comprehensive interpretation of the people who lived and worked in Harpers Ferry. To provide a more complete story of the area's human history, the park needs to research early American Indian history.
- Park staff recognize the need to improve the park's storage capacity for its museum collection and archives. Currently, much of the collection is stored off-site at various facilities, and the storage and exhibition spaces at the park do not meet museum standards. The park's curatorial staff and volunteers are packing the museum collection for any relocation, and 20 cartons of artifacts are slated to be moved to the Park Service's National Capital Region museum near Washington, D.C., in 2009. In 2006, the director of the National Capital Region approved plans for a facility that would store artifacts from several area national parks (Antietam National Battlefield, Manassas National Battlefield, Catoctin Mountain Park, Chesapeake and Ohio Canal National Historical Park, and Monocacy National Battlefield). However, there are no funds available at this time for such a facility.
- Several areas within the park are susceptible to slope failure: cliffs that have been made too steep, have been mined, or have had structures built on them. These areas are particularly susceptible to failure during and after heavy rains.

One component of managing this threat is to monitor the condition of the park's culverts and the effectiveness of the drainage systems. These considerations have received little management attention and an inventory of the park's culverts and their condition is needed.

- Gypsy moths threaten the park's forests and the species they support by defoliating trees and shrubs. The Park Service works with the U.S. Forest Service to survey gypsy moths. An aerial survey in June 2007 identified 215 acres of forest that had been extensively defoliated by gypsy moths. A subsequent report found the gypsy moth population to be healthy, building, and capable of causing up to 1,615 acres of heavy defoliation during 2008. The park treated about 2,500 acres with a biological pesticide and a viral insecticide in early May, and a recent inventory indicates the treatment was nearly 100 percent successful in reducing the gypsy moth populations. The viral insecticide is specific to gypsy moths and does not harm native butterflies and moths. About 200 acres that were not treated in 2008 might need to be treated in 2009.
- Support from gateway communities and preservation organizations has been critical in helping the park protect resources. Gateway communities see the park as a partner and an asset that boosts local economies and contributes to the communities' quality of life. Many community leaders have been pivotal in advocating for compatible adjacent land use, boundary expansions, and increases in funding.

The park stores some items from its museum collection in temporary locations such as the Shipley School, which is considered an inadequate facility because it lacks environmental controls and protection from the elements.



MARSHA WASSEL/NATIONAL PARK SERVICE

RESOURCE MANAGEMENT HIGHLIGHTS

- Harpers Ferry staff have worked extremely hard to improve the interpretation of the park's resources for visitors, including installing additional interpretive waysides that offer visitors the chance to learn about the park. Staff recently built new trails throughout the park to provide access to important areas, such as the battlefield where Confederate and Union forces fought in 1862. A new interpretive walking trail to the School House Ridge South area opened on National Trails Day in June 2007, and is the result of collaboration among many staff who worked long hours to complete the job by Trails Day.
 - In the spring of 2007, the park reopened the historic Baltimore and Ohio Harpers Ferry Train Station following a three-year restoration that entailed establishing a new building foundation; reconstructing the tower on the east end; making the entire building handicapped accessible; installing new restrooms; rebuilding the fireplace and chimney in the east waiting room; reestablishing the historic slate roof; and restoring the paint scheme to its 1890s period. The fully restored station includes an interpretive exhibit on the history of the train station.
 - Park staff work with conservation and historical preservation organizations and local stakeholders to preserve historic views, such as those from Jefferson Rock and from the cliffs on Maryland and Loudoun Heights, from adjacent development. By acquiring adjacent land and opposing development that is incompatible with park goals, park staff and supporters have been successful in their efforts. For example, in 2007 they successfully lobbied against a significant development threat on the park's borders.
- Developers sought to rezone 410 acres of historically significant land nearly surrounded by Harpers Ferry National Historical Park to allow for intense commercial development. County officials ultimately rejected the rezoning. The property remains at risk until a solution compatible with park values is reached.
- The park has participated in an innovative peregrine falcon reintroduction and tracking program in conjunction with The College of William and Mary, the U.S. Fish and Wildlife Service, Maryland Department of Resources, and Dominion Power. Between 2001 and 2005, 29 birds were released within the park with the hope that some will return as breeding adults. The park needs funds to continue the project.
 - Natural resource staff recently installed a bat gate at John Brown Cave that allows bats to pass through, but bars entry to larger animals and humans. Staff installed the gate to protect fragile cave resources.
 - The park has been in the process of updating its general management plan for several years. A draft plan was released in August 2008, and public comments were accepted during the last quarter of 2008. The Park Service is in the process of finalizing the updated general management plan. It is scheduled for completion in 2009.
 - The Park Service is working with local tourism offices and as part of four-state committee to plan a variety of events in 2009 to commemorate the 150th anniversary of John Brown's historic raid. See www.nps.gov/hafe for details.

Harpers Ferry's diverse past is interpreted through exhibits like this display of machinery used to manufacture weapons.



RYAN GRAHAM



THE HARPERS FERRY NATIONAL HISTORICAL PARK ASSESSMENT



CULTURAL RESOURCES— NATION'S HISTORY ON DISPLAY AT HARPERS FERRY

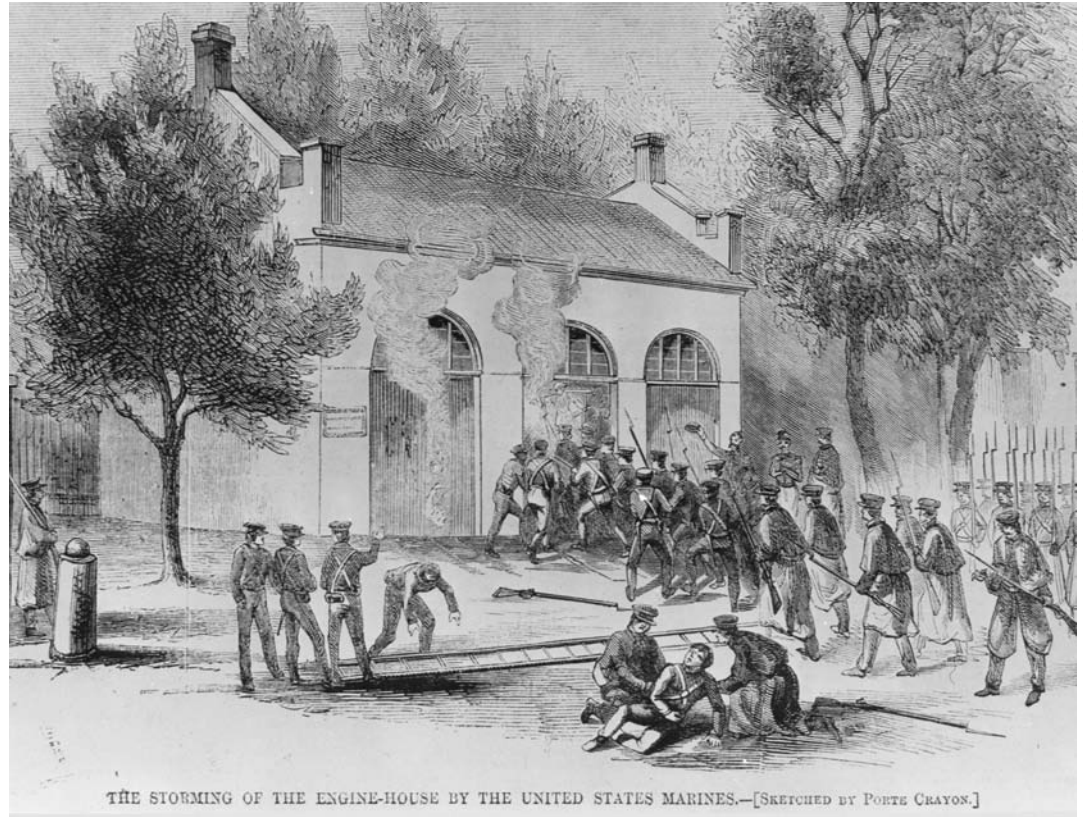
Harpers Ferry National Historical Park scored an overall 83 out of 100 for cultural resource conditions, including history, historic structures, cultural landscapes, archaeology, and museum collection and archives. A score of 83 indicates that the park's cultural resources are in

“good” condition. Many factors contributed to this score. For example, the park interprets its history well for visitors through more than 150 wayside exhibits, living history exhibits, and an exhibit in the newly restored train station. In addition, park staff, nonprofit organizations, and local stakeholders have succeeded in protecting most of the park's historic viewsheds from development.

Key challenges at Harpers Ferry include a

Anthony Memorial Hall—the centerpiece of Storer College (one of the nation's first integrated colleges when it opened in 1867)—is among the park's numerous historic structures. Today it houses Mather Training Center.

John Brown's raid on the federal armory and arsenal in 1859 was one of the most significant events that took place at Harpers Ferry. This sketch by Porte Crayon shows the U.S. Marines storming the armory's engine house, which ended the raid. After the raid the building became known as John Brown's Fort.



THE STORMING OF THE ENGINE-HOUSE BY THE UNITED STATES MARINES.—[SKETCHED BY PORTE CRAYON.]

COURTESY OF NATIONAL PARK SERVICE

lack of planning documents and staff, continued threats from adjacent development that would affect the park's viewshed and cultural landscapes, and inadequate museum storage and exhibit spaces.

HISTORY—PLANNING DOCUMENTS AND STAFF WOULD BOOST RESOURCE MANAGEMENT

The Harpers Ferry area has a rich history of human use, beginning as a seasonal home for American Indians. Permanent European settlement of the area began in 1732 and accelerated around 1747 when Robert Harper took over operation of the Shenandoah ferry, which carried people across the river. The town of Harpers Ferry was eventually founded on land that Robert Harper owned. President George Washington selected Harpers Ferry as the site for the nation's second federal armory in 1794, and construction began in 1799. Many types of weapons were produced at the United States

Armory and Arsenal at Harpers Ferry, which underwent a sweeping renovation and expansion between 1845 and 1854. The armory's workforce grew along with the buildings, increasing from 25 workers in 1802 to about 400 in 1859. With the completion of the Chesapeake and Ohio Canal in 1833 and the arrival of the Baltimore and Ohio Railroad line the following year, the town quickly became the area's transportation hub.

One of the most notable events to occur at Harpers Ferry was John Brown's raid. On October 16, 17, and 18, 1859, abolitionist John Brown and his men seized the armory and arsenal, in the hopes that by arming free and enslaved African Americans, he could further the abolition movement. Brown and his men barricaded themselves inside the fire engine house at the armory, remaining there until a group of U.S. Marines under the command of Colonel Robert E. Lee stormed the building and forced them to surrender. When the dust settled,

17 people had lost their lives and John Brown and six of his men had been arrested on charges of murder, conspiring with slaves to rebel, and treason against the State of Virginia. Brown's trial lasted just five days. He was found guilty on all charges and was sentenced to death. Brown was hanged on December 2, 1859. His raid played a pivotal role in the events leading up to the Civil War, as any hope of a peaceful resolution between abolitionists and proponents of slavery vanished.

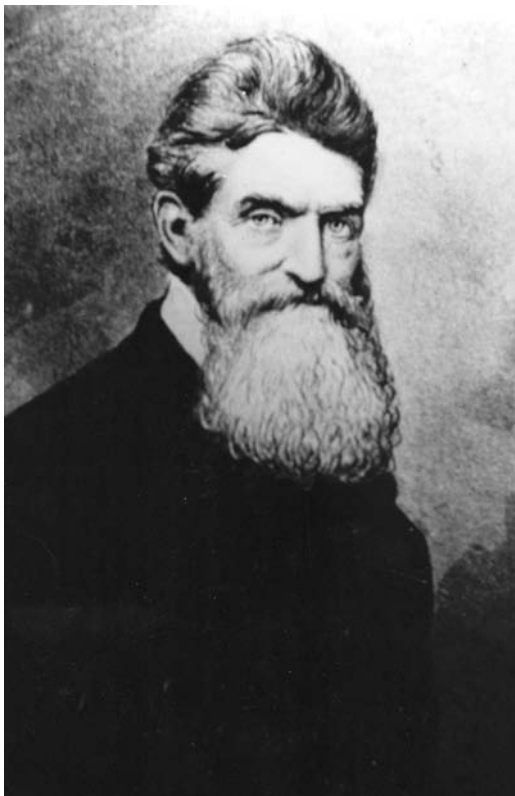
Following the secession of Southern states and the firing upon Fort Sumter, South Carolina, on April 12, 1861, the Civil War quickly came to Harpers Ferry. Union soldiers set fire to the armory just six days later to keep it out of the hands of the Confederate Army. As a result of its strategic location providing access to the Shenandoah Valley, Chesapeake and Ohio Canal, and the Baltimore and Ohio Railroad, Confederate and Union forces fought for control of Harpers Ferry, and the town changed hands eight times during the war. In 1862, the Confederate Army crossed the Potomac to engage Union troops in the north for the first time. General Robert E. Lee split his forces and sent 28,000 troops with General Thomas Jonathan "Stonewall" Jackson to meet some 14,000 Union troops stationed at Harpers Ferry. The fighting lasted for three days and ended with a decisive Confederate victory and the largest surrender of Union troops during the Civil War. The park now protects most of the battlefields associated with this struggle.

Harpers Ferry continued to witness history after the end of the Civil War, with the founding of Storer College, one of the nation's first integrated colleges, in 1867. New England Freewill Baptist missionaries founded the college primarily to educate former slaves, but it was open to students of all races and both genders, as dictated by the college's primary donor, John Storer of Maine. About 40 years after the founding of Storer College, Harpers Ferry hosted another significant event in African-American

history—the second conference of the Niagara Movement. W.E.B. Du Bois and other prominent African Americans established the Niagara Movement to fight racial segregation and Jim Crow laws. The group's ideas and goals later led to the establishment of the National Association for the Advancement of Colored People (NAACP) in 1909.

Harpers Ferry has witnessed a rich and varied history, and since the park was established, it has extensively expanded both in terms of acreage and the scope of interpretation to preserve as much of this history as possible. When Harpers Ferry National Historical Monument was established in 1944, the park included fewer than 1,500 acres. Harpers Ferry's authorized boundaries now encompass 3,745 acres, having added more than 1,200 acres since 2000. The park now interprets six major themes: industry, natural history, transportation, John Brown, the Civil War, and African-American history.

To protect and interpret the area's history,



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Abolitionist John Brown (pictured here) and a group of men attempted to seize the armory and arsenal at Harpers Ferry in 1859, resulting in a standoff that lasted three days. The men ultimately failed to secure the armory, and Brown was hanged for his involvement.

The historic Lower Town area in Harpers Ferry is one of the park's 15 recognized cultural landscapes. Well-preserved buildings help staff interpret the early history of the area.

park staff need numerous management plans and studies. The park is currently in the process of completing a general management plan, its most comprehensive and important planning document. A park business plan was completed in 2003, and an administrative history was completed in 2005. The park also has historic resource studies that explore several areas, including business enterprises and commercial development in the Lower Town area, Storer College, the train station, the armory, the Lockwood House, Maryland Heights, Loudoun Heights, and Short Hill. Staff have identified several additional cultural resources that need historic resource studies, including the newly acquired areas of School House Ridge South and the Murphy Farm. Staff have requested funding for these studies.

While the park's boundaries have expanded to protect critically important lands over the

years, the budget and resource management staffing allotment has not kept pace. The park would benefit from the addition of a park historian and a cultural resource management specialist to focus on all of the historical aspects of the park and guide research. Specific areas that require research, documentation, and planning include many of the park's historic structures, cultural landscapes, and newly acquired properties. Additional research is also needed regarding the lives of the early 19th-century immigrants who worked in the armory, as little is known about them, as well as the lifeways of the early Native Americans of the area. Gaining this information will allow park staff to provide a more comprehensive interpretation of resources for visitors.

CULTURAL LANDSCAPES— ENCROACHING DEVELOPMENT THREATENS PARK RESOURCES

Cultural landscapes demonstrate how people have shaped and been shaped by their surroundings. Harpers Ferry National Historical Park has identified 15 cultural landscapes, which vary in their scope, significance, and condition. Some of the landscapes are important for their ties to the area's early industrial history, several relate to the Civil War, and others have significant connections to African-American history.

In order to protect the park's cultural landscapes, staff need plans, studies, and reports to guide their management decisions. Currently, the park has cultural landscape reports for just three of its landscapes, though reports and inventories are currently under way or planned for several other cultural landscapes. The park's cultural landscape program is comprised of just one staff person, a landscape architect, so staff from the Park Service's Olmsted Center for Landscape Preservation and the National Capital Regional Office provide the park with cultural landscape documentation and research.

Harpers Ferry National Historical Park is

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charged with maintaining its landscapes to reflect their appearance during a specific historical period of time—the 19th and early 20th centuries. Battlefields are maintained by park staff and through agricultural leasing to give visitors a sense of where the Civil War fighting occurred. Cultural resource and natural resource staff collaborate with one another to sustain the historic integrity of these landscapes, efforts that are complicated by natural forces (e.g., erosion and weathering). Recent examples of cross-disciplinary cooperation include removing vegetation that was not present during the Civil War to preserve the historic viewscape and lines of sight and the construction of 18 new hiking trails. One trail now provides access to School House Ridge South, which Stonewall Jackson held with his troops during the Battle of Harpers Ferry. His position on the ridge completed the Confederate encirclement of the Union garrison and helped ensure the Union surrender.

The most pressing threats to Harpers Ferry's landscapes are the residential and commercial development encroaching on the park's boundaries (see "Adjacent Development Threatens Park Resources"), a lack of funding for management plans, and flooding in the Lower Town portion of the park. A lack of planning documents makes it difficult for staff to manage the park's cultural landscapes beyond the day-to-day decisions, while flooding that occurs about every 12 to 15 years within the Lower Town portion of the park threatens John Brown's Fort and several blocks of museums and historic buildings that now contain interpretive exhibits.

ADJACENT DEVELOPMENT THREATENS PARK RESOURCES

Harpers Ferry National Historical Park is located within the fastest growing region in West Virginia. Between April 2000 and July 2006, the population of Jefferson County, West Virginia, where most of the park lies, grew by 19.6 percent, and Loudoun County, Virginia, where part of the park lies, consistently ranks as one of the fastest growing counties in the United States. As a result of this growth, residential and commercial development has threatened the park for more than 20 years. Recently, developers sought to rezone a critical 410-acre parcel that is nearly surrounded by the park to allow for intense commercial development. Such development would mar historic viewsheds and compromise the park's ability to interpret historic events. After opposition from park staff, conservation groups, and local stakeholders, Jefferson County officials denied the rezoning of the area, which halted the development. The future of this land remains in question, however, and the park is still at risk until a final solution that protects park values is found.

The views from several high points within the park are extremely important resources. To further protect these historic views from being marred from residential and commercial development, staff have worked to acquire many parcels of land. But there are still several plans to build residential and commercial buildings on or near the Harpers Ferry battlefield. The largest looming threat is the potential development of the Old Standard Quarry site at the southern extent of Bolivar Heights (see photo on page 21). This property is visible from the trails and wayside exhibits at School House Ridge and from the scenic overlook at Murphy Farm. Proposals for development on this site have ranged widely from 2 million square feet of commercial space, to a hotel and conference center, to a museum. Until a solution for this property that protects park values is solidified this critical land remains at risk. Also of concern because of their potential to detract from historic viewsheds are proposed cell towers and emergency communications facilities adjacent to the park. Staff are currently reviewing proposals for two cell towers and one emergency communications tower.

ALAN SPEARS



The Lockwood House, originally built in 1847, housed the paymaster for the United States Armory, was the headquarters for Union General Henry Lockwood during the Civil War, and was later used by Storer College. Today the exterior of the building has been rehabilitated, but the interior remains in need of restoration.



MARSHA WASSEL/NATIONAL PARK SERVICE

HISTORIC STRUCTURES—NATIONALLY SIGNIFICANT CULTURAL RESOURCES PRESERVED

Historic structures are integral cultural resources at Harpers Ferry National Historical Park. The park currently has 135 structures on its list of classified structures, an inventory of significant historic structures. The park plans to update this list with about 50 more structures in 2009. Of the 135 currently listed structures, 57 are in “good” condition, 66 are in “fair” condition, and 12 are in “poor” condition. Generally, those structures located outside the park’s floodplains are in “good” condition.

The most visited historic structure at the park is the fire engine and guard house where John Brown and his followers barricaded themselves and several hostages during their attempted raid on the Harpers Ferry armory. This building, now referred to as John Brown’s Fort, was the only armory structure to survive the Civil War. Because of its important history, the building has been moved several times since the raid. It

was first dismantled in 1891 and transported to Chicago to be displayed at the World’s Columbian Exposition. After years of lobbying and fundraising by residents and interested parties, the building was moved again in 1895 back to the Harpers Ferry area, where it was rebuilt on the Murphy Farm about three miles outside of town. Storer College purchased the fort in 1909 and moved the structure to its campus in Harpers Ferry. The Park Service acquired the fort in 1960 and moved it once again in 1968 to where it sits today, about 100 feet from its original location in Lower Town. Despite its age and cross-country travels, the fort is in good condition. The park’s new general management plan proposes a study to examine the feasibility of moving the John Brown Fort to its original location on the armory grounds.

Park staff contracted Lumus Construction and Facilities Services of Woburn, Massachusetts, to complete restoration of the Harpers Ferry Train Station, built in 1894 to serve the Baltimore and Ohio Railroad. The station had

fallen into disrepair, and in 1999 the Great American Station Foundation recognized it on its list of the Top 10 Most Endangered Stations in America. Station restoration began in the summer of 2005 and cost \$2.2 million, paid for with federal funds and a state grant obtained by the town of Harpers Ferry. The company completed the restoration and the park reopened the building to the public in the spring of 2007. The park has an agreement with the town for community use of the station.

Other historic structures in the park are also in need of restoration, as well as routine maintenance. Staff have identified a number of projects that are needed to boost historic structure protection, including restoration of the Lockwood House (home of the armory paymaster, then headquarters of Union General Henry Lockwood, and then home to the Storer Normal School, a.k.a. Storer College), new coats of paint for historic structures; and repairs to historic structures to allow visitor access.

Severe flooding by the Shenandoah and Potomac Rivers has destroyed many of the historic structures in the Lower Town portion of the park, leaving them in ruins. Two floods in 1996 forced the park to close some areas and spend hundreds of thousands of dollars on emergency mitigation. Remaining structures in the Lower Town, many of which are the park's oldest, are still in danger from flooding. In an effort to lessen the impact of floods, park staff have reinforced buildings and developed plans to safely evacuate staff and priceless museum objects. Stabilizing the Potomac shoreline would provide better protection for historic structures and other resources. Cultural resources affected include the upper and lower armory grounds, the hydroelectric plant, Potomac Canal, and canal headgates. This stabilization and protection would reveal, through archaeological research and restoration of buildings and ruins, the significance of the 19th-century Harpers Ferry industrial complex known as the Harpers Ferry Armory.

The park employs a historic architect to oversee the management of its historic buildings. The historic architect works closely with the park's landscape architect, facility manager, and interpretation staff. One strategy for keeping historic structures in good condition is to renovate and adaptively reuse them as administrative offices, museum and visitor center space, and employee housing. Currently, the park uses 78 historic structures.

ARCHAEOLOGY—ADDITIONAL RESOURCES WAITING TO BE DISCOVERED AND PRESERVED

Harpers Ferry National Historical Park protects a wealth of archaeological resources. According to the most recent assessment released in 2007, 137 of the 157 sites listed in the Archeological Sites Management Information System (a database of archaeological sites in the National Park System) are in "good" condition, 17 are in "fair" condition, and only three sites are in "poor" condition. Harpers Ferry's archaeological sites include waterpower and industrial sites; prehistoric sites; Civil War fortifications and encampments; the remains of historic roads; and domestic sites such as homes.

Virginus Island was home to numerous commercial enterprises and industrial facilities during the late 18th and early 19th centuries. Battered by years of floods, many of these buildings have been reduced to their foundations.



MARSHA WASSEL/NATIONAL PARK SERVICE

Park Service interpreter Dennis Frye describes the Second Niagara Movement's 1906 barefooted pilgrimage from Storer College to John Brown's Fort, then located on the Murphy Farm. The fort's foundation has since been rehabilitated. An archaeological survey of Murphy Farm is scheduled to be completed soon.

A concentration of the park's archaeological sites are on Virginius Island, which is located between the banks of the Shenandoah Canal and the Shenandoah River, near the Lower Town section of Harpers Ferry. Virginius Island was home to numerous commercial enterprises, including a tannery, a sawmill, an iron foundry, and a cotton mill that later became a flour mill. It also contained many homes of people who worked at the armory and at these various businesses. The businesses and homes are now ruins, devastated by the numerous floods that have occurred in the area since the structures were built. Today the park preserves the ruins and interprets them through on-site exhibits and educational programs in schools.

Poachers threaten to carry away the archaeological resources at Harpers Ferry National Historical Park. Law enforcement rangers continuously patrol the park, but they cannot have a presence everywhere all the time. As often as they can, staff apprehend offenders and prosecute them.

Additional threats to the park's archaeological resources include the remoteness of some of the resources; flooding; a lack of baseline data for some areas; inadequate funding to control invasive non-native plants that can obscure and damage resources; and development on nearby lands that could bury or damage archaeological artifacts that would be useful for the park to interpret the history of Harpers Ferry.

The park employs an archaeologist who is assisted by several term positions that are filled depending on available funding. Staff have inventoried archaeological resources in 40 percent of the park, and they would like to survey even more area, as every inch of the park has witnessed historical events. Most recent archaeological investigations focused on the site of the lower armory grounds. During this three-year project, two structures and surrounding landscape features associated with the industrial site were excavated. Well-preserved foundation and interior features were recorded and a large and diverse collection of artifacts was retrieved. Staff are currently working on completing analysis and preparing a report of the findings.

A survey of the Murphy Farm is scheduled for fiscal year 2011, if funds are approved. The farm was the location where General Ambrose Powell Hill's men performed a critical flanking maneuver during the 1862 Battle of Harpers Ferry, which allowed the Confederate Army to surround the town and capture the Union forces. The Murphy Farm was also the temporary location of John Brown's Fort before it was moved to the Storer College campus in 1909. A collection of material donated to the park by a previous owner of the farm indicates a strong probability for discovering American Indian use of this site. The Park Service acquired management of the farm in 2002.



JAMES NATIONS

MUSEUM COLLECTION AND
ARCHIVES—PARK PRESERVES
EXPANSIVE AND DIVERSE COLLECTIONS

Harpers Ferry National Historical Park has an expansive museum collection that contains more than 600,000 artifacts, including original weapons and equipment made in or used at Harpers Ferry; original maps and photographs; Storer College library books and archives; paintings and prints of the town and citizens; and period industrial equipment and tools. Perhaps the most well-known and frequently visited museum artifact at the park is the John Brown family Bible, which is displayed with items from the raid and subsequent trial. Twenty-one other exhibits housed within 13 historic structures throughout the park display and interpret many other original objects as well as reproductions. These exhibits cover topics ranging from African-American history to Civil War events to Harpers Ferry's industrial roots.

The park's museum staff includes a curator and a museum specialist who are occasionally assisted by volunteers and interns. Despite the small staff size and large number of items in the museum and archival collections, important management documents are up-to-date, newly discovered items are cleaned and cataloged soon after they are discovered, and about 96 percent of the museum collection is cataloged. Archival documents make up the majority of the uncataloged items (84 percent of archives are uncataloged). They are not cataloged as quickly as other items because the park lacks an archivist.

The most pressing concern facing park staff as they strive to preserve and protect museum and archival collections is the absence of adequate storage space for these artifacts. Available storage spaces in the park are not consolidated, and many do not provide adequate climate, humidity, fire, and security protection. Flooding is another threat to museum artifacts that are on display throughout the park. To mitigate this threat, Harpers Ferry National Historical Park has planned evacuation routes for staff and

priceless museum artifacts in the case of floods. The park has requested funds for a temporary storage space with the proper climate controls and safeguards. There is also a more ambitious proposal to construct a museum and collections storage facility that would house the Harpers Ferry collections, as well as collections from other parks in the National Capital Region. However, there are no funds available for this facility at this time.

ETHNOGRAPHY—RICH HUMAN HISTORY
WITNESSED

Ethnography is the area of anthropology that applies scientific study to human cultures. While the National Parks Conservation Association did not rate this category in this assessment due to the lack of an official ethnography program at Harpers Ferry National Historical Park, the area does have a rich human history that park staff research, explore, and interpret for visitors.

The park has identified two major groups of people with traditional associations to the park—American Indians and African Americans. Archaeological explorations suggest that American Indians established a seasonal presence in the area prior to European contact, although specific groups have not been identified and the park's interpretive program does not currently explore this history.

Harpers Ferry has played a role in several stages of African-American history, from slavery to abolition and the Civil Rights Movement. The area's African-American history is well documented and is one of the park's main interpretive themes.



The park's expansive museum collection includes a variety of items that are on display for visitors at the dry good store.



Recent studies indicate that Harpers Ferry's white-tailed deer population is overabundant.

NATURAL RESOURCES— PARK PROTECTS HISTORIC VIEWS AND RARE ANIMAL AND PLANT SPECIES

The National Parks Conservation Association's assessment rated the overall condition of natural resources at Harpers Ferry National Historical Park a score of 75 out of 100, which ranks park resources in "fair" condition. Prominent factors influencing the ratings include the fragmented nature of parklands and the connected issue of encroaching adjacent development, diseases and pests affecting forest trees, water-quality concerns, and the effects of

invasive species on native plants and animals.

The park was primarily established to protect cultural resources and commemorate historical events, and as a result a large portion of the park's resources are dedicated to this work. The park employs about 100 full-time staff, but the entire natural resources program has only one full-time employee. This staffing shortfall prevents the park from monitoring and managing threatened and endangered plants and animals and their habitats; addressing pests and non-native species; continuing the peregrine falcon reintroduction program; and monitoring air and water quality.

LAND USE HISTORY—LANDSCAPES
ALTERED BY LOGGING,
AGRICULTURE, MINING, AND
DEVELOPMENT

Archaeological evidence indicates that American Indians used the Harpers Ferry region seasonally for centuries before European settlement began in the early 1700s. The area's natural resources and location along the Shenandoah and Potomac Rivers later facilitated the development of Harpers Ferry into a busy industrial center and transportation hub by the mid-1800s. Logging for building materials and for charcoal, agriculture, mining, and commercial development occurred, which extensively altered Harpers Ferry's natural landscape. For example, settlers mined cliff slopes to allow for development and used the rock as building material, contributing to the current geological instability in the area.

The area's topography and its location near two large rivers prone to flooding helped dictate where development occurred, though floods still routinely damaged man-made structures.

Residents built bridges, canals, and tunnels to foster development, altering hydrology where it was possible; today, the canals are naturally reverting to wetland habitat.

Both the Confederate and Union Armies took an interest in the Harpers Ferry area during the Civil War, and fighting took its toll on both the landscape and the economy. Frequent bombardment destroyed much of the town's built environment, while logging intensified, ravaging the area's forests. Today most of the park is covered with second- or third-growth forest, and these areas are mostly healthy, having strongly rebounded from this historical damage.

The Park Service works to maintain the historical character of Harpers Ferry, rather than attempt to restore natural ecosystems that would have been present prior to town development. The park achieves this goal by maintaining historical land uses such as agriculture. The park established a land-leasing program in 1999 and currently leases about 425 acres to local farmers. The farmers pay a fee to plant

Harpers Ferry's land-leasing program allows local farmers to rent parkland in places like Bolivar Heights (pictured). The program benefits the park by retaining historic viewsapes and continuing traditional agricultural uses.



STEVE LOWE/NATIONAL PARK SERVICE

approved crops on the land and also agree to mow the park's open fields (e.g., Bolivar Heights battlefield).

PARK HABITATS—FACING NUMEROUS THREATS

Harpers Ferry National Historical Park encompasses 3,745 acres of hardwood forest; floodplains and open valleys; steep cliffs; mowed fields; and wetland and riparian habitats in West Virginia, Maryland, and Virginia. Harpers Ferry contains uncommon plant habitats, including limestone red-cedar glades and low-elevation montane habitats, and these support a number of state-listed rare plant species.

The vast majority of Harpers Ferry National Historical Park, more than 80 percent, is comprised of mixed hardwood deciduous upland forest, interspersed with parcels used for agriculture and small areas of developed land. Pests and diseases that affect certain tree species such as elms, butternuts, dogwoods, and hemlocks are a concern to park staff.

The primary forest pests of concern in the area are gypsy moths. Gypsy moths (*Lymantria dispar*) were brought to North America from Asia in the late 1860s to start a silkworm industry.

Their larvae prefer to feed on oak trees, but they will eat many other trees and shrubs, too, causing extensive defoliation. Gypsy moths were first discovered in the area around Harpers Ferry in 1975, and the park has monitored the species since 1981. Each autumn Park Service and U.S. Forest Service staff survey moth populations. When these surveys indicate that the populations are dense enough to cause moderate to severe defoliation, staff prepare an environmental assessment to explore mediation options. The park applied aerial chemical treatments in 1984, 1987, 1988, 1989, 1993, 2001, and 2002. The Forest Service has monitored the park's vegetation for gypsy moth damage annually since 2002. An aerial survey conducted in 2007 discovered heavy gypsy moth defoliation within the park. In response, the park treated 2,500 acres in May 2008, and surveys indicate the treatment was nearly 100 percent effective in reducing gypsy moths. Areas not treated still harbor elevated levels of gypsy moths, so the park will likely treat about 200 more acres in 2009.

Woolly adelgids (*Adelges tsugae*), pests that specifically target eastern hemlock trees (*Tsuga canadensis*), have devastated the park's hemlocks. Surveys published in 2000 found

In 2006 developers illegally excavated a trench for utility pipes across the historic Perry Orchard, part of Harpers Ferry National Historical Park. The developers own an easement but had not received a permit, and no archaeological surveys were completed prior to this action. Park advocates continue to petition the U.S. Department of Justice for an appropriate response.



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92 percent of the park's hemlock trees were infested with woolly adelgids. More recent surveys have not been done. Harpers Ferry's hemlock trees already constitute a small population, and the woolly adelgid threatens to completely extirpate the once-abundant hemlock tree from the park. Hemlocks provide shade as well as food and habitat for birds and small mammals. Thus, the loss of these trees has widespread ramifications for the ecological community they anchor. The woolly adelgid is not limited to Harpers Ferry; it has also caused widespread hemlock mortality in other portions of the eastern United States, including parts of the Blue Ridge Parkway and Shenandoah National Park. The park is not treating the adelgid, partly because the park's hemlock stands are small and also because funds for treating pests and diseases are limited.

According to surveys published in 2000, approximately 75 percent of the park's butternut trees (*Juglans cinerea*) are afflicted with a perennial fungus (*Sirococcus clavignenti-juglandacearum*) that causes spreading branch and stem cankers that eventually girdle and kill infected trees. Butternut is currently considered a "species at risk" on the list of the endangered and threatened plants under the Endangered Species Act. West Virginia's Natural Heritage Program lists the butternut as a very rare species vulnerable to extinction. There is currently no known treatment or cure for butternut canker.

In addition to pests and diseases that affect park forests, steep slopes in the park are prone to landslides and mudflows. Human activities such as logging and over-steepening of cliffs to make way for building construction have increased the potential for slope failures, which could result in serious damage to valley slopes, damage to park and private property, and possibly human fatalities. Portions of Jefferson Rock, one of the park's most prized and visited natural features, are also in danger of breaking away



and falling. Park staff monitor at-risk slopes and have hired contractors to stabilize some rocks to keep them in place.

The park contains several wetlands totaling about 100 acres, which are important habitats for numerous wildlife species, especially reptiles and amphibians. The University of Maryland is in the process of producing a wetlands inventory for Harpers Ferry. Floods affect the wetlands periodically, and they are particularly sensitive to damage from visitor trampling and upstream pollution. The most significant wetland in the park is an 8-acre patch of abandoned man-made lake, created by an impoundment of the Shenandoah River. Another significant wetland area grew out of the abandoned Shenandoah Canal. Because of the fragmented nature of these habitats, wildlife that use the park's wetland areas must cross roads with regular vehicular traffic, which exposes them to injury or death from collisions with vehicles.

Bolivar Heights runs south towards the Shenandoah River and faces potential development on a large former quarry site, known as Old Standard Quarry. This property is virtually surrounded by parkland. All features in this view are part of Harpers Ferry National Historical Park, except the lower forest ridge beyond the open field—Old Standard Quarry.



The great blue heron is one of Harpers Ferry National Historical Park's 174 known species of birds.

PLANT COMMUNITIES AND PARK WILDLIFE—RARE AND THREATENED SPECIES RESIDE IN THE PARK

Harpers Ferry National Historical Park's wealth of plant and tree species has been extensively studied. The park contains at least 561 vascular plant species. While there are no federally listed species present in the park, 26 species are listed by West Virginia, Maryland, or Virginia as endangered, threatened, or potentially threatened, including swamp loosestrife (*Decodon verticillatus*), lobed spleenwort (*Asplenium pinnatifidum*), and Short's aster (*Aster shortii*). There are also many species of concern (i.e., globally or locally rare or threatened) within park boundaries.

Monitoring and protecting the park's populations of native plants is a high priority both because the plants themselves have value and because some of them provide habitat for threatened wildlife. For example, the park's toothwort plants (*Dentaria* spp.) support the West Virginia white butterfly (*Pieris virginienis*), listed as threatened by both Maryland and Virginia. This species was once common but is now in serious decline. The population drop is attributed to both habitat destruction and the success of invasive non-native garlic mustard plants (*Alliaria petiolata*), which can quickly colonize an area and displace native toothwort plants. West Virginia white butterflies will lay their eggs on garlic mustard plants, but the plants are toxic to the larvae that hatch.

Garlic mustard and other invasive non-native plant species pose a problem because they compete with native species for space and nutrients. A 2002 non-native plant survey (the park's most recent) identified 207 non-native plant species within the park. Transportation routes around and within the park (e.g., the railroad, canals, trails, and roads) have facilitated the transfer and establishment of non-native plants. The Park Service's National Capital Region Network exotic plant management team monitors these non-natives and has been treat-

ing and re-treating non-native species that encroach upon native and rare plants. The park could use additional funds to develop and implement a general policy of eradication.

The park's wildlife has been studied less extensively than its plants, but species inventories note that the park hosts about 36 mammal, 14 amphibian, 18 reptile, 43 fish, and 174 bird species. Notably, Harpers Ferry is home to one of the most diverse populations of butterflies and skippers in the tri-state area. While the park does not house any federally listed threatened or endangered wildlife species, it does host a number of state-listed rare or threatened species. These include the peregrine falcon (*Falco peregrinus*), wood turtle (*Clemmys insculpta*), the West Virginia white butterfly, and a variety of dragonfly and damselfly species.

The park initiated a peregrine falcon introduction program in 2001, releasing 29 falcons into the park between 2001 and 2005, in the

hopes that the juveniles would return to the park to nest and breed. Six of these falcons were fitted with radio transmitters to track their movements through a partnership with the FalconTrak project. The park closes one area, the Maryland Heights Peregrine Falcon Restoration Site, during the early summer when the young falcons would be present to avoid any disturbances to the birds. To date, however, none of the released falcons have returned to the park to nest, and a lack of funding and staff has prevented the park from releasing any falcons since 2005.

Significant threats to the park's wildlife come from roads that run throughout the park, as well as from adjacent development. Both of these can cause habitat fragmentation and edge effects that harm wildlife. Amphibians and reptiles, such as spotted salamanders (*Ambystoma maculatum*) and turtles, are particularly at risk of being killed as they attempt to



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Harpers Ferry initiated a peregrine falcon reintroduction program in 2001, with the goal of bringing the state-listed falcon back to the park. To date, 29 juvenile falcons have been raised and released into the park with the hope that they will one day return to the park to nest.

Fringeleaf wild petunia, a state-listed endangered plant in Maryland, is one of the park's rare plant species. Staff would like to conduct additional research on the plant to ensure that it is fully protected.



STEPHANIE PERLES/NATIONAL PARK SERVICE

cross roads that travel through the park. Drivers must use caution to avoid hitting wildlife. Roads can also disrupt migration routes to and from breeding areas and isolate populations, as noted in the "Park Habitats" section. Adjacent development can reduce and/or fragment habitat used by park wildlife and can also cut off traditional migration routes (in addition to harming historic viewsheds and lands with historic value). In an attempt to mitigate these threats, the park works with its neighbors to encourage land uses that are compatible with park resource goals (e.g., agriculture), and to acquire land when possible.

The park needs to complete additional research to gain a comprehensive understanding of rare and threatened species, the health of the park's biotic communities, threats from invasive species, and conditions of park waters, soils, and geologic resources. Harpers Ferry staff are currently working on digitally storing the data that the park already has, as well as enter-

ing park data into geographic information systems (GIS) databases, but with limited staff and funds, completing additional research is a challenge. Ongoing and proposed surveys and studies of the park's karst topography, wetlands, soils, forest vegetation, ferns, air quality, water quality, and other resources are being or will be conducted primarily by researchers from institutions and agencies that include the University of Maryland, U.S. Department of Agriculture, and the National Park Service Center for Urban Ecology. In addition, the Center for Urban Ecology is developing protocols for monitoring white-tailed deer (*Odocoileus virginianus*) in the park. Recent studies indicate that Harpers Ferry's white-tailed deer population is overabundant. A large number of deer can drastically reduce native understory species and contribute to the success of invasive non-native plants.

AIR AND WATER QUALITY—WATER QUALITY WELL STUDIED

Harpers Ferry's bodies of water include segments of three tributary streams of the Potomac and Shenandoah Rivers—Piney Run, Elk Run, and Flowing Springs Run—as well as a number of seeps and springs. Though the Shenandoah and Potomac Rivers run through the park, they are not within its boundaries and are not under the purview of the National Park Service. A 1997 report indicated that the overall quality of Harpers Ferry's surface waters is good, though a number of pollutants exceeded U.S. Environmental Protection Agency criteria in some of the waters sampled. Total coliform and fecal coliform exceeded these criteria most often, a concern because people use park waters for recreation. More recent studies reveal that pollutants to some degree degrade almost all water bodies sampled in the park. The contaminants of concern—coliforms, metals, nutrients, and chloride—all indicate human sources of pollution.

Adjacent development and agricultural practices can introduce pollutants into Harpers Ferry National Historical Park's water resources. Future development and its impact on the park's water resources is a major concern for park staff. Both point (septic systems of private residences, runoff from a large junkyard adjacent to the park, a sewage treatment plant within the park's boundary) and nonpoint sources (runoff from highway and railroad corridors, agricultural lands and neighboring communities) of pollution have been identified within the park's watershed.

The U.S. Geological Survey and other federal and state agencies monitor the quality of Harpers Ferry's bodies of water at numerous gauging stations both within and around the park. For example, the National Capital Region Network of the Park Service's Inventory and Monitoring program measures a number of water-quality parameters periodically (monthly to quarterly) at Flowing Springs Run. However,

the park's wetlands are not monitored, even though they are extremely sensitive to degradation and are very important habitats for a myriad of wildlife species. In particular, monitoring is needed for the three streams that flow into the 8-acre wetland along Shoreline Drive.

There are currently no air-quality monitoring stations at Harpers Ferry National Historical Park. The closest air-quality monitoring station at a national park is located at Shenandoah National Park, some 70 miles away, and is deemed too distant to draw conclusions for Harpers Ferry. The closest monitoring station not within a national park is located in Martinsburg, West Virginia, situated about 15 miles from Harpers Ferry. The West Virginia Department of Environmental Protection administers this equipment. Data from this station indicate that the area's air quality is moderate for most of the general air-quality categories, including ozone and particulate levels. However, a high number of unhealthy days in the early 2000s reveal that the area is susceptible to elevated levels of air pollution. The adjacent development in the area also concerns park staff as the increase in automobile traffic will mean more carbon monoxide, lead, ozone, and nitrogen oxides emitted into the atmosphere.

There are several bodies of water within park boundaries that provide habitat for aquatic and riparian plant and animal species, including the painted turtle shown here. According to a 1997 assessment, Harpers Ferry's water resources are in good condition.



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Advocacy by NPCA and community leaders led to the historic Murphy Farm being added to the park in 2002. In this photo, a visitor contemplates the spectacular view from Murphy Farm looking upstream along the Shenandoah River.

STEWARDSHIP CAPACITY

FUNDING AND STAFFING—SHORTFALLS LIMIT PARK PROGRAMS AND RESOURCE PROTECTION

The most significant factor affecting a park's ability to protect its resources is the funding it receives from Congress and the administration. In fiscal year 2008, Harpers Ferry National Historical Park had an operating budget of \$6.25 million to support staff and fund resource protection projects. The park's budget has steadily increased over the last decade, but cost-of-living adjustments and inflation have cut into these increases.

Harpers Ferry's current budget does not allow the park to fully staff its cultural resource, natural resource, and facility management divisions. The park's business plan recommends the park employ an additional nine full-time staff for each of the cultural and natural resource divisions. In addition, the plan notes that the facility management division is under staffed by 15.5 positions. The park needs additional cultural resource staff to monitor and protect cultural resources, to manage the vast archives, and to conduct archaeological investigations. Specific positions include a historical archaeologist, museum technician, archivist, and groundskeeper. The park's natural resource

program needs staff to monitor the park's rare plant and animal species and habitats; monitor and maintain park boundaries; combat destructive gypsy moths; resume peregrine falcon reintroductions; address complex external issues such as proposed incompatible land uses, communications towers, and landowner complaints and requests; and participate in a host of other resource protection and management activities. The park's single natural resources staff member is stretched to the limit with work that includes developing required planning documents, updating land and resource management plans, completing environmental assessments for new projects, and overseeing research efforts in the park.

Staffing shortfalls extend beyond the cultural and natural resources divisions and affect other aspects of park operations. The park does not have the personnel to ensure adequate law enforcement protection of cultural resources in remote areas, and the facility maintenance division has lost several positions (e.g., painters,

carpenters, grounds staff, and custodians), which has led to a backlog of projects and the inability to adequately maintain the park's historic and nonhistoric buildings. The maintenance staff no longer have time to clean and maintain exhibits, which has resulted in the accumulation of dust, dirt, cobwebs, and debris in exhibit and collection areas. With the current staffing, the park is only able to care for these areas sporadically, and this neglect could lead to long-term damage.

PLANNING—UPDATED GENERAL MANAGEMENT PLAN IN FINAL PHASE OF DEVELOPMENT

Park staff are in the process of revising the Harpers Ferry National Historical Park General Management Plan. This plan is the park's most important guiding document, and it is a valuable tool for resource managers charged with protecting park resources. In addition to the general management plan, the park has several reports and inventories that are scheduled for

Due to funding and staffing shortfalls, the number of formal interpretive programs (ranger-led tours and scheduled talks) that Harpers Ferry has been able to offer has dropped by more than half over the last three years.



MARSHA WASSEL/NATIONAL PARK SERVICE

the near future, including an archaeological survey and assessment of Murphy Farm, several cultural landscape reports, and two cultural landscape inventories.

To best manage park resources, Harpers Ferry is in need of additional cultural and natural resource management plans, reports, surveys, and assessments. Cultural resource plans that are needed include an archaeology site monitoring plan, an ethnographic survey/assessment, a vegetation management plan for Civil War resources (fortifications, earthworks, and campgrounds) on Maryland, Loudoun, and Bolivar Heights, and a vegetation management plan for cultural landscapes throughout the park.

Needed natural resource plans include a white-tailed deer monitoring plan, an exotic plant management plan, vegetation management plans, a geologic hazard management plan, several integrated pest management plans, and habitat management plans for the limestone red-cedar glades and other unique habitats. Funding and staffing shortfalls prevent the

park from completing needed plans.

In addition to keeping up with the many internal park planning processes, it is critically important that the park have the staff and expertise to participate in the planning processes of the towns and counties that surround it. By participating proactively in comprehensive planning and zoning processes the park can work to protect its scenic landscape and act as a resource for the surrounding communities. As indicated in the "Funding and Staffing" section, current staffing shortfalls make it difficult for the park to fully address external issues such as incompatible land uses and landowner requests.

RESOURCE EDUCATION—PARK OFFERS MANY LEARNING OPPORTUNITIES

Harpers Ferry National Historical Park provides an incredible variety of interpretive and educational experiences for visitors and schoolchildren, both at the park and off-site. The park's interpretive program focuses heavily on cultural

Interpretive waysides have been placed throughout the park to educate visitors on the history of the area. This wayside provides information on the Curtis Memorial Freewill Baptist Church, which was the centerpiece in the lives of Storer College students and staff.





Watching one of the park's celebrated living history programs, like this Civil War artillery exhibition, is a popular activity at Harpers Ferry National Historical Park.

and historical resources and includes formal programs, waysides and exhibits, self-guided tours, school programs, and living history programs. In addition, rangers staff the visitor center and rove throughout the park providing informal interpretation. The park has also developed a comprehensive school education program that covers every historic theme that is interpreted at Harpers Ferry: industry, transportation, Lewis and Clark, John Brown, the Civil War, and the area's African-American history. Park rangers provide education programs to more than 50,000 students who visit the park each year.

The interpretive program consists of 16 permanent and 14 temporary employees. To adequately serve the 250,000 visitors the park receives each year, the park needs about 30 temporary employees. One of the consequences of this staffing shortfall is that living history exhibit interpretation, tours, and demonstrations are offered only on weekends in the spring

and fall. In 2007, the largest segment of the park's interpretation program was the 1,384 education programs that were given. The education component has grown dramatically since 2004, when staff presented just 236 education programs. To meet the increased demand, staff have been reallocated from the living history and visitor services programs. As a result of the reallocation of staff, the reduction in overall staff at the park, and budget limitations, the number of formal programs, such as guided tours and scheduled talks, decreased to 2,147 programs in 2007, fewer than half of what were offered in 2004. These formal programs reached 41,392 visitors in 2007. Informal interpretation reached another 152,489 people.

Interpreters staff the visitor center at Cavalier Heights as well as an information center in Lower Town each day the park is open throughout the year. Throughout the spring and fall, interpretive rangers give one or two daily guided tours in Lower Town. During

Costumed staff and volunteers from the park's living history program work each day during the summer and on the weekends during the spring and fall.



MARSHA WASSEL/NATIONAL PARK SERVICE

the summer, staff provide guided tours hourly at Lower Town, Bolivar Heights, Camp Hill, and Murphy Farm. Interpretive rangers also rove the park during the summer to provide informal interpretation to visitors. Staff perform living history demonstrations and interpretation each day during the summer and on the weekends during the spring and fall. The Civil War is prominently interpreted with artillery demonstrations and performances depicting Civil War encampments.

In addition to formal interpretive programs, Harpers Ferry provides visitors with the opportunity to explore the park on their own by providing self-guided tours and trails, nearly 150 interpretive waysides, and numerous exhibits within the park's eight museums. One park exhibit titled "Reading a Building" teaches visitors how to discover details about what structures once stood at a location, even after the structures are long gone and have been replaced by new ones.

Although the park offers visitors opportunities to participate in guided tours, explore the park on their own, and peruse many exhibits, its visitor center does not adequately serve visitors. It is smaller than 1,000 square feet and was never designed to serve its current function. The building was built as a bus station for visitors waiting for shuttles, and it has no exhibits, orientation film, seating, or space for rangers to provide interpretation. A new visitor center is proposed in the draft general management plan.

EXTERNAL SUPPORT—VOLUNTEERS PROVIDE INVALUABLE ASSISTANCE TO PARK STAFF

Faced with significant funding and staffing shortfalls, the park increasingly relies on partners and volunteers to bridge the gap between what is needed and what the park can afford. In fiscal year 2007, volunteers contributed 39,070 hours of service, helping staff within every park division. This represents nearly a two-fold increase

in volunteerism at Harpers Ferry since 2004. This dramatic expansion has occurred because the park now partners with local universities and colleges via internship programs; the living history program has been expanded; and the park now uses Student Conservation Association interns. Volunteers work on projects to improve the park's cultural landscapes; assist staff with education and living history programs; provide visitor services; work on maintenance projects; and assist with natural resources projects such as the peregrine falcon program, white-tailed deer monitoring, and vegetation and boundary management. In 2008, the park hired a part-time volunteer coordinator.

In addition to contributions from volunteers, Harpers Ferry receives extensive assistance from many outside agencies and organizations that work with the park to protect its historic and natural integrity. These groups have been instrumental in helping the park counter the enormous development pressures it has faced since the 1980s. These organizations include the National Trust for Historic Preservation, Civil War Preservation Trust, Friends of Harpers Ferry National Historical Park, Harpers Ferry Historical Association, Harpers Ferry Conservancy, and National Parks Conservation Association, among many others. They have helped the park advocate for park boundary expansion, acquire and incorporate donated land, request funds from Congress for land acquisition, and they have met with congressional delegations to advance park causes.

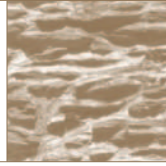
Harpers Ferry National Historical Park has made great investments in growing relationships with its neighboring gateway communities. As a result, the gateway communities see the park as a partner and an asset that boosts local economies and contributes to the communities' quality of life. Many community leaders have been pivotal in advocating for compatible adjacent land use, boundary expansions, and increases in funding.

WHAT YOU CAN DO TO HELP:

- **Support or become a member of a group helping to protect the park**, such as NPCA (www.npca.org/support_npca), Friends of Harpers Ferry National Historical Park (304.535.2757), Harpers Ferry Historical Association (www.harpersferryhistory.org) and other groups listed under "External Support."
- **Volunteer.** Harpers Ferry National Historical Park is looking for dedicated people who can lend a helping hand. To learn about opportunities, contact the park at 304.535.5017.
- **Become an NPCA activist and learn about legislative initiatives affecting parks.** When you join our activist network, you will receive Park Lines, a monthly electronic newsletter with the latest park news and ways you can help. Join by visiting www.npca.org/takeaction.



Volunteers, pictured here clearing vegetation from a historic fence row, are vital to the protection of Harpers Ferry's resources. They assist staff within every division.



APPENDIX: METHODOLOGY

To determine the condition of known natural and cultural resources at Harpers Ferry National Historical Park and other national parks, the National Parks Conservation Association developed a resource assessment and ratings process. The assessment methodology can be found online at NPCA's Center for State of the Parks website: www.npca.org/state-oftheparks.

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

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

Stewardship capacity refers to the Park Service's ability to protect park resources, and includes discussion of funding and staffing levels, park planning documents, resource education, and external support.



MARSHA WASSEL/NATIONAL PARK SERVICE

Harpers Ferry National Historical Park preserves the area's diverse history and rich natural resources.

For this report, researchers collected data and prepared technical documents that summarized the results. The technical documents were used to construct this report, which was reviewed by staff at Harpers Ferry National Historical Park prior to publication.

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

ACKNOWLEDGMENTS

For more information about the
Center for State of the Parks®
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Isle Royale National Park (MI)
Joshua Tree National Park (CA)
Keweenaw National Historical Park (MI)
Knife River Indian Villages National Historic Site (ND)
Lewis and Clark National Historical Park (OR)
Lewis and Clark National Historic Trail (various)
Little Bighorn Battlefield National Monument (MT)
Longfellow National Historic Site (MA)
Missouri National Recreational River (NE)
Mojave National Preserve (CA)
Nez Perce National Historical Park (WA, ID, MT, OR)
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