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July 2009

EFFIGY MOUNDS NATIONAL MONUMENT

A Resource Assessment



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

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Center for State of the Parks®

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

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

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

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

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

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

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

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Cover: The overlook at Fire Point provides impressive views of the Mississippi River. Photo courtesy of the National Park Service.



INTRODUCTION



Effigy Mounds National Monument offers a unique glimpse into the lives of precontact American Indians (i.e., American Indians before the arrival of Europeans or Euro-Americans) in a setting that is a nature lover's paradise. Nestled along the western bank of the Mississippi River in northeastern Iowa, the park remains a largely undiscovered gem within the National Park System, protecting an array of nationally significant cultural and natural resources while offer-

ing numerous recreational opportunities for visitors. American Indians built the earthen mounds for which the park was named sometime during the Woodland Period (1000 B.C. to A.D. 1000) for burial and other ceremonial purposes that remain a mystery. Some archaeologists believe the mounds were built to mark celestial events or seasonal observances, while others speculate they were constructed as territorial markers or as boundaries between groups.

Effigy Mounds National Monument is home to a long line of bear effigies, shown here, known as the Marching Bear Group.



The earliest mound within the park was built some 2,500 years ago during the Early Woodland Period (1000 to 300 B.C.).

Mounds built during the Early Woodland Period were similar to mounds constructed during the Late Archaic Period (3000 to 1000 B.C.)—shaped like a cone with red ochre (pigment made from naturally tinted clay) scattered throughout the mound. Over time, the size, shape, and designs of Woodland culture mounds changed. The Hopewell Culture, a Middle Woodland mound-building culture, also influenced the Middle Woodland Period mound builders through a complex exchange network of exotic goods and ideas. By the Late Woodland Period (A.D. 500 to 1000), mound design began to shift away from conical forms, and mounds in the shape of animals became common. While the Effigy Mound-Builders (as those from the Late Woodland Period are sometimes called) continued to construct conical and linear mounds for burial and other ceremonial they also built effigy mounds, which typically took the shape of five basic forms—birds; animals in plan view, or as viewed from above (turtles and lizards); tailed animals lying on their side (panthers and wildcats); tail-less animals lying on their side (bears or buffalo); and, though rare, humans. The mounds at Effigy Mounds National Monument include a long line of bear effigies known as the Marching Bear Group, several bird effigies, linear mounds, large conical mounds, and compound mounds (a combination of conical and linear mounds).



Together these mounds comprise one of the largest concentrations of American Indian mounds in the United States.

In addition to the significant cultural resources protected within Effigy Mounds National Monument, bountiful natural resources surround the monument's mounds. Situated in the Driftless Area, a part of the Midwest untouched by the last glacial advance (which ended 10,000 years ago), the monument contains habitats ranging from wetlands to upland forests that support numerous animal and plant species, including federally and state-listed rare species such as Higgins eye pearly-mussel, peregrine falcon, and jeweled shootingstar. The monument's impressive natural resources can be experienced from a number of scenic overlooks and on hiking trails that meander for miles.

President Harry S. Truman established Effigy Mounds National Monument in 1949, to preserve and protect the earth mounds for their scientific value and significance to precontact American Indian peoples. The park's mandate was expanded by legislation in 1961 to include the protection and interpretation of wildlife resources, scenic viewsheds, and other natural resources of the area. Today the park encompasses 2,526 acres within four units: North Unit, South Unit, Sny Magill Unit, and the Heritage Addition. The addition was acquired in 2000 to protect a host of cultural and natural resources, including the remains of the Jefferson Davis Sawmill that was built to provide lumber for the construction of Fort Crawford (see page 11), as well as floodplain forests, upland forests, goat prairies, and savannah remnants that support myriad animal and plant species. A thorough survey of the Heritage Addition is now needed to identify additional resources that are located there.

EFFIGY MOUNDS NATIONAL MONUMENT AT A GLANCE

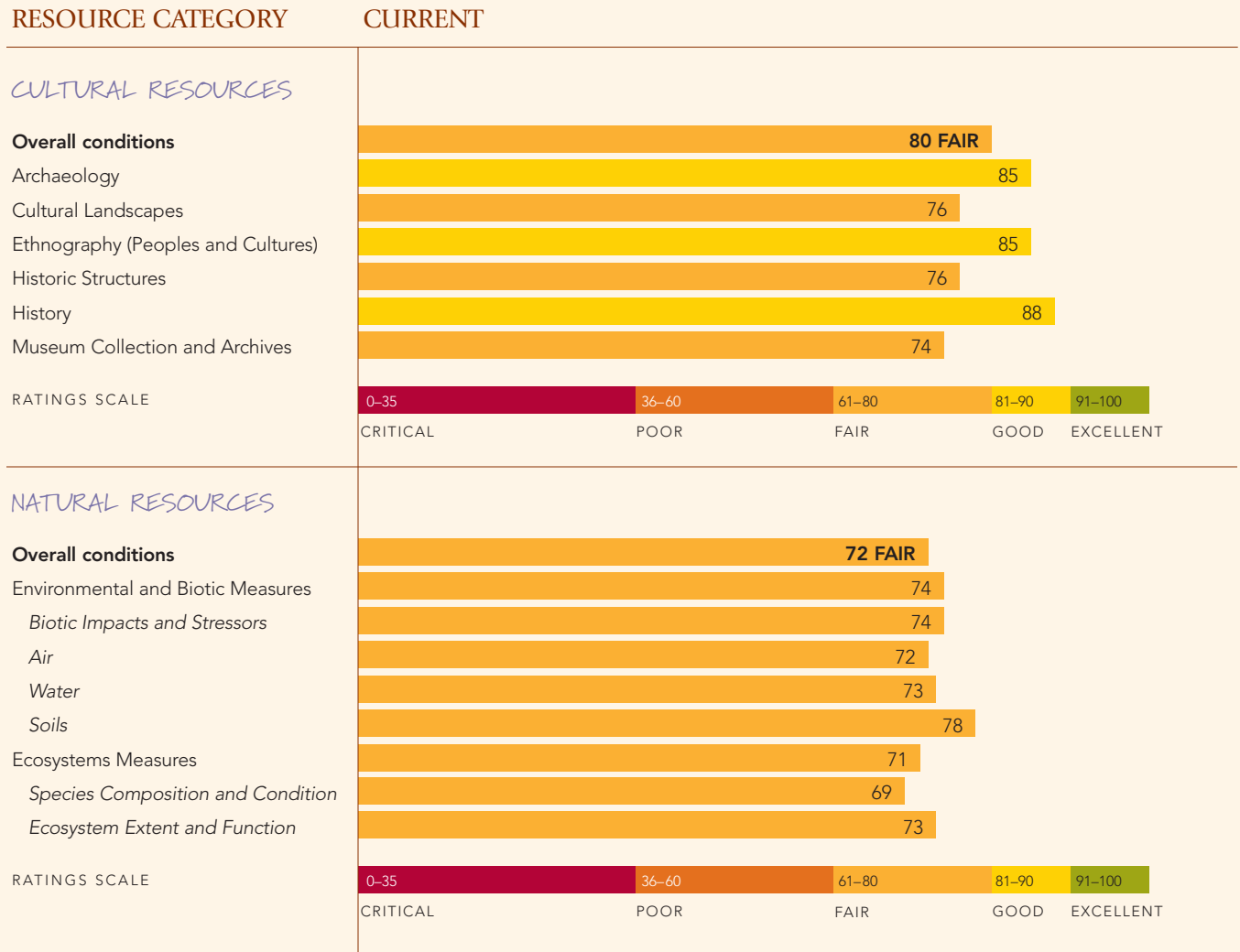
- **Distinguished cultural resources:** The monument preserves more than 200 precontact mounds built by people during the Woodland Period, making it one of the largest concentrations of American Indian mounds in the United States. The park also seeks funds to research and interpret the area's later history—Euro-American settlement, military activity in the area during the early to mid-19th century, and the removal of American Indians to reservations during the mid-19th century.
- **Striking natural resources:** Effigy Mounds National Monument is one of the largest protected natural areas in the state of Iowa, rendering it an important refuge for plants and animals. The monument contains diverse ecosystems and habitats; threatened and endangered species; a 3.6-mile length of the Yellow River; numerous resident and migratory bird species; unique caves, sinkholes, springs, and subsurface caverns that support varied microclimates and plant and animal species; and four ponds that provide important habitat for wetland and aquatic species.
- **Recreational activities:** October is the most popular month to visit the park, when the fall foliage bursts with stunning colors. Five scenic overlooks (Eagle Rock, Fire Point, Third Scenic View, Twin Views, and Hanging Rock), all within the park's North Unit, offer visitors the chance to take in expansive and sweeping views of the Mississippi River Valley and surrounding areas. Effigy Mounds also offers 14 miles of hiking trails and ranger-led guided hikes throughout the park's various habitats when staff are available.

The Yellow River Bridge Trail leads visitors through some of the monument's wetland areas.



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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 Effigy Mounds National Monument, 94 percent of the cultural resources information was available, and 57 percent of the natural resources information was available.



The findings in this report do not necessarily reflect past or current park management. Many factors that affect resource conditions are a result of both human and natural influences over long periods of time, in many cases 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 Effigy Mounds National Monument, the National Parks Conservation Association's Center for State of the Parks conducted an assessment to determine current conditions of the park's resources. Based on this assessment, overall conditions of the park's known cultural resources rated a "fair" score of 80 out of 100. The scores for **cultural resources** are based on the results of indicator questions that reflect the National Park Service's own *Cultural Resource Management Guideline* and other policies related to cultural and historical resources.

Effigy Mounds benefits from a strong base of historic and archaeological research, including a historic resource study, administrative history, and an archaeological overview and assessment. In addition, park staff work to maintain positive relationships with traditionally associated American Indian groups and have worked with these groups to perform several repatriation ceremonies where human remains and associated objects were reburied within the park.

Effigy Mounds protects numerous archaeological sites, including more than 200 precontact mounds, as well as the historic remains of several manmade structures and other historic sites and resources. The park has an archaeological overview and assessment that was completed in 2004; Effigy Mounds' archaeological resources are listed in the Park Service's Archeological Sites Management Information System; 25 of the 28 rated archaeological sites are in "good" condition; and the park works closely with archaeological staff from the Midwest Archeological Center in Lincoln, Nebraska. While the park has completed much research on the mounds and precontact period, additional work would contribute to the cultural resource knowledge base. Potential projects include a survey of the Heritage Addition to locate and document archaeological and other cultural resources, as well as

research on the park's more recent historic resources, such as the 19th-century homesteads and early pioneer settlement sites.

A limited number of staff (e.g., the park lacks a full-time cultural resource specialist, museum curator, historian, and archivist), limited funds to restore cultural landscapes and historic structures, and lack of funds to survey and protect resources in the Heritage Addition, which accounts for 41 percent of the park, are challenges the park faces. The park also needs to update key planning and management documents.

Overall conditions of the park's known **natural resources** rated a score of 72 out of 100, indicating "fair" conditions. Ratings were assigned through an evaluation of park research and monitoring data using NPCA's Center for State of the Parks comprehensive assessment methodology (see "Appendix"). Factors that influenced the natural resources score include the encroachment of woody species into savanna and prairie ecosystems; the growing populations of invasive non-native plant species, particularly in the wetland and riparian habitats; and the incompatible development occurring just outside the monument's boundaries.

Effigy Mounds National Monument

| | |
|---|---|
| Park location | Northeastern Iowa, on the western bank of the Mississippi River |
| Park establishment | 1949 |
| Park size (acres) | 2,526 (in four units) |
| Annual number of visitors (2007) | 88,268 |

KEY FINDINGS

- **Adjacent development detrimental to park resources:** Effigy Mounds National Monument is surrounded by farms and residential areas, making the park a sanctuary for native plant and animal species. Park lands are not well connected to nearby natural lands, and the risk exists that the monument could become further isolated. Development hinders the movement of wildlife into and out of the park and affects nesting bird species by reducing the availability of suitable nesting habitat. This adjacent development also threatens Effigy Mounds' cultural resources, including the archaeological resources located on or near the park's boundary, which is undefined in areas and makes protection even more difficult. These resources are in danger of being disturbed by the development or agricultural activities on adjacent land. The park needs a boundary survey so park staff and adjacent landowners know where the park's boundary lies.
- **Invasive non-native plants threaten native species:** Although researchers believe that the monument's non-native invasive species are still manageable, several species are beginning to pose a serious threat. Park managers consider invasive species control to be a priority and have identified seven species that are of the greatest concern: common buckthorn, garlic mustard, Japanese barberry, multiflora rose, reed canary grass, sericea lespedeza, and shrub honeysuckle. The park uses chemical herbicides, mechanical means of removal (mowing, pulling, and cutting), and prescribed burns to combat some of these non-native invasive plant species.
- **Funding lacking for research:** The park has a number of top-priority resource projects that require funds to complete, including constructing a walking trail to the Marching Bear Group; collecting oral histories from the park's traditionally associated groups on issues regarding group member visitation to Effigy Mounds and the significance of the area to the tribe/nation, among others; recording oral histories of employees (past and current) and others with a significant history with the park; and surveying, controlling, and monitoring the invasive non-native garlic mustard plant. Additional projects include completing a boundary survey of the entire monument; reorganizing and expanding the monument's museum storage space to properly house the park's collections; researching the park's lesser-known historic structures (e.g., the military road, cistern, Jefferson Davis Sawmill, and precontact rock shelters and habitation sites); and completing a thorough survey of resources in the newly acquired Heritage Addition.
- **Plans and reports outdated:** Effigy Mounds National Monument's planning needs include an update to the general management plan (scheduled to be completed in 2009), a resource stewardship strategy (draft under way), an update to the long-range interpretive plan (scheduled to be completed in 2010), an ethnographic overview and assessment, an update to the collection management plan, a scope of collections statement, a cultural landscape report for the Sny Magill Creek and Yellow River cultural landscapes, and a historic structure report for the precontact mounds and other historic structures. The monument's



The monument uses prescribed burns in its efforts to combat invasive non-native plants.

Heritage Addition, which was acquired in 2000, also needs to be thoroughly surveyed for archaeological and ethnographic resources. Once the general management plan and resource stewardship strategy are completed, park staff can write the more focused resource-specific plans (some of which are listed above) to address the goals set out within the larger planning documents.

- **Increased staffing critical:** Effigy Mounds does not have any staff members that are dedicated solely to cultural resources. The museum collection would benefit from a permanent full-time museum technician to care for the 34,800 items in the museum collection and archives and a full-time cultural resource manager or specialist. The monument's natural resource staffing needs include an additional permanent full-time biologist, a permanent subject-to-furlough biological technician, and three seasonal biological technicians. In

summer 2009, the park received funds to begin filling some of these natural resource positions. Effigy Mounds has not been able to fund a full-time visitor and resource protection program, leaving the public and resources unprotected for up to five months per year, despite known resource violations occurring year-round. According to a National Park Service study, the monument's visitor and resource protection program requires an additional 1.25 full-time equivalent (FTE) positions to bring the program up to the minimal national safety and security standards. The monument's resource education and interpretation division needs include two additional full-time rangers, one full-time park guide, and more FTE seasonal rangers.

RESOURCE MANAGEMENT HIGHLIGHTS

- **Prescribed burns used as management tool.** Effigy Mounds National Monument staff are using prescribed burns to accomplish a number of objectives: restore remnant prairie habitats that have been encroached on by woody species, maintain the openness of important existing prairie and savannah habitats, provide habitat for native wildlife, and combat invasive non-native plant species. A fire management plan, updated in early 2009 and in the final approval stage at the Midwest Region Fire Management Office, will guide this work.
- **Landscape restoration ongoing.** Park Service staff have been restoring the monument's habitats to their native species composition and condition since the 1990s. Effigy Mounds National Monument includes 50 acres of oak savannah, of which 15 have been restored by removing trees and shrubs (3 inches in diameter or less) to free the oaks from encroachment, followed by prescribed burns to spur regeneration of native savannah grasses. In the park's open fields and prairies, staff conduct prescribed burns on a seven-to-ten-year cycle to stimulate growth and reduce encroaching

woody plant species. Eighty acres of prairie within the monument have been restored. The mounds within the Sny Magill Unit have also received restoration attention: Staff have cut down trees, removed stumps, and planted native vegetation in an effort to reduce erosion and re-establish native habitat.

- **Repatriation ceremonies and oral histories connect the park to traditionally associated peoples.** Effigy Mounds National Monument staff and affiliated American Indian groups have performed three repatriation ceremonies, in which human remains and objects from the park's museum collection have been reburied within the national monument. In an effort to record the histories of the monument's associated American Indian groups, staff have also completed a series of oral histories of tribal members from the Ho-Chunk, Iowa, and Sac & Fox groups. The monument would like to interview representatives from the other culturally affiliated tribes as well.
- **Archaeological resources protected.** Despite inadequate funding and being stretched thin, Effigy Mounds staff have successfully enforced archaeological resource protection laws. In 2008, an adjacent landowner was charged with a civil violation of the Archeological Resource Protection Act, netting a penalty of more than \$19,000. This judgment is one of the largest Archeological Resource Protection Act penalties in Park Service history.
- **Native species reintroduction.** In the late 1990s, Effigy Mounds staff worked with the Raptor Resource Project, a nonprofit organization based in Iowa, to reintroduce

Park ranger Merle Frommelt addresses a group of teachers during a summer workshop session. The park's workshops offer area educators opportunities to expand their environmental education curriculum.

KEN BLOCK





Park staff and members of the Raptor Resource Project reintroduced peregrine falcons to northern Iowa during the late 1990s. Here, a peregrine falcon is being introduced to a temporary home atop Hanging Rock. The bird was later released after acclimating to the location.

peregrine falcons, extirpated from the area in 1964, back into northern Iowa by establishing a reintroduction and monitoring site within the monument at Hanging Rock. The program released a total of 18 falcons in 1998 and 1999, and now there are 24 breeding pairs that nest and reproduce in the Upper Mississippi Valley as a result of these efforts. Scientists from the Bell Museum of Natural History and The Raptor Center at the University of Minnesota monitor the reintroduction program's progress.

- **Park educates both teachers and students.** Effigy Mounds National Monument offers teacher workshops that are popular with area educators. The workshops, managed by a staff member who is a retired local schoolteacher, offer continuing education credit for the 250 teachers that take part in the program every summer. This program is particularly significant because the State of Iowa does not currently require environmental

education, and this is an opportunity for educators to expand their curriculum. Partnerships between the park and associated American Indian tribes, regional archaeological organizations, and Silos and Smokestacks National Heritage Area enhance the workshops. During the school year, ranger-guided walks and interpretive presentations educate area students about the cultural and natural resources of the region.

- **General management plan updates coming soon.** Effigy Mounds National Monument is scheduled to complete an updated general management plan in 2009. This overarching planning document will include an overview of management directions and priorities, addressing issues of visitor access, boundaries/ownership, education, and cultural and natural resources.



THE EFFIGY MOUNDS NATIONAL MONUMENT ASSESSMENT

KRISTEN MAXFIELD

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Effigy Mounds National Monument



Thirty-one of the monument's more than 200 mounds were built in the shape of birds or bears. The Marching Bear Group shown here includes ten "marching bears," three bird mounds, and two linear mounds.

CULTURAL RESOURCES— RICH HISTORY PROTECTED AND INTERPRETED

Effigy Mounds National Monument scored an overall 80 out of 100 for the condition of cultural resources, including history, historic structures, ethnography, cultural landscapes, archaeology, and museum collection and archives. A score of 80 indicates that the park's

cultural resources are in "fair" condition. Effigy Mounds' history, ethnography, and archaeology programs all received high scores and reflect the park's success in protecting cultural resources and maintaining positive relationships with traditionally associated American Indian groups. Additional studies and plans such as an ethnographic overview and assessment, an updated collection management plan, and a historic structures report for the precontact

mounds and other historic structures are needed, as are staff positions to care for the park's cultural landscapes and historic structures, including the precontact mounds and the museum collection and archives. Additional precontact resources in need of further research include habitation and rock shelter sites.

PARK PRESERVES A WINDOW INTO THE LIVES OF PRECONTACT AMERICAN INDIANS

Precontact peoples in the Midwest region first constructed burial and ceremonial mounds during the Archaic Period (8000 to 1000 B.C.). The earliest mounds within Effigy Mounds National Monument date much later to the Early Woodland Period and were built approximately 2,500 years ago. Effigy Mounds contains at least 206 mounds, 31 of which are effigies in the shape of bears and birds. Most of the monument's mounds are in "good" or "fair" condition. Of the 213 structures on the list of classified structures, just two are not mounds: the old military road and the cistern near old military road, and five structures are in the process of verification. According to the list, 149 of the park's historic structures are in "good" condition, 48 are "fair" condition, and 16 are in "poor" condition. Little Bear Mound, one of the monument's best examples of an effigy mound, and Great Bear Mound, the largest effigy mound in the monument, are both located in the park's North Unit. The Marching Bear Group, located in the South Unit, contains ten "marching bears," three bird mounds, and two linear mounds.

The mounds located within the monument were sometimes used for burials, while others did not contain any human remains but may have been built for ceremonial purposes. The Late Woodland period is often referred to as the Effigy Mound-Builder period because the mounds contained few if any bodies, which represents a digression from earlier mound builder practices.

The mounds are integral components in the cultures of contemporary American Indian tribes in the region, who view them as sacred ceremonial sites that provide a link to their ancestors. Staff at Effigy Mounds National Monument participate in the general upkeep of these features and their surroundings in order to prevent potential damage to the mounds and to facilitate interpretation of these cultural features. This work includes removing trees and stumps on and near mounds, repairing any damage from the trees or burrowing animals, mowing the mounds biannually to hinder woody plant and shrub growth from shading the mounds, and controlling invasive non-native plant species.

The Sny Magill Unit contains more than half of the park's mounds. Because several of these mounds are located next to the Mississippi River, they are threatened by sedimentation and erosion. Park staff have placed buoys in Johnson Slough to identify the "no wake" zone adjacent to the Sny Magill Unit in an effort to reduce the effects of large wakes from water traffic on the river's banks. Staff from the Midwest Archeological Center also conducted riverbank stabilization projects in 1994 and 2008, in hopes of slowing the deterioration of those mounds.

PARK'S RESOURCES EXTEND BEYOND PRECONTACT MOUNDS

In addition to more than 200 mounds, the park contains other historic structures, some of which are from the area's more recent history, such as a remnant of a military road, a cistern, and the remains of a sawmill. These resources help the park interpret the area's history beyond the mounds, and better place the area within United States history.

In 1816, Fort Crawford was built on an island in the Mississippi River near Prairie du Chien, Wisconsin, to protect American interests within the Louisiana Purchase, guard arriving settlers, and enforce treaties with American

Removing stumps (shown here) and trees near mounds is an important part of caring for these cultural features.



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Indians. A sawmill was built on the Yellow River in 1829 to provide lumber for construction of a new Fort Crawford, which was being built on higher ground on a hill near the Mississippi River's eastern bank. In 1831, Colonel Zachary Taylor (later the 12th president of the United States), commanding officer at Fort Crawford, sent Lieutenant Jefferson Davis (who later became the president of the Confederate States of America during the Civil War) to oversee operations at the sawmill. Before the mill was decommissioned in 1849, it also provided construction materials for the Winnebago tribe's Yellow River Mission School. The mission school was built in 1834 under the direction of General Joseph Street, U.S. Indian agent of the Winnebago, and taught Winnebago students until 1840. The remains of the sawmill, now known as Jefferson Davis Sawmill, are at least partially located within the Heritage Addition unit of the park. Monument staff recommend that an archaeological overview and assessment and survey for other resources be produced for the Heritage Addition to assess current resource conditions and to identify present and future

threats. This work would have to be conducted by the Midwest Archeological Center or be contracted out to a third party.

In 1840, a military road was built across what is now the monument's South Unit to connect Fort Crawford with Fort Atkinson (also built in 1840) 40 miles to the west. Teams of mules pulled wagons containing supplies between the forts on the military road. Fort Atkinson was built to protect the Winnebago Indians from rival tribes, but this responsibility ended in 1848 when the government moved the Winnebago tribe to a reservation in Minnesota. The military continued to use the road until 1849 when Fort Crawford was abandoned. Following the abandonment, pioneers continued to use the road until 1860. Today the historic military road is in "fair" condition and is still visible within the monument's South Unit, but is not interpreted. Park staff would like to complete research and interpret the road and other historic resources (e.g., 19th-century homesteads and early pioneer settlement sites) in the park, but need to acquire funding to do so.

This small mortar and grinding stone are part of the monument's museum collection.



STAFF NEEDED TO CARE FOR THE PARK'S MUSEUM COLLECTION AND ARCHIVES

The museum collection and archives at Effigy Mounds contain approximately 34,800 items, of which 30,800 have been cataloged. The Ellison Orr Collection makes up the bulk of the park's holdings and is comprised of artifacts such as pottery, points, stone tools, pot sherds, stone flakes, a research library, manuscripts and personal papers, mineral and fossil specimens, and a herbarium that were part of archaeologist Ellison Orr's personal collection. Orr extensively surveyed the mound area from the 1920s into the 1940s.

The park exhibits 171 museum objects for the public at the museum within the visitor center, but needs additional exhibit space and artifacts, as previously displayed resources were removed for repatriation. The remaining objects represent the park's premier items, such as precontact American Indian artifacts. The majority of the monument's remaining objects are stored in the lower level of the visitor center, which meets the National Park Service's minimum standards for artifact storage (e.g., temperature and humidity are monitored, artifacts are contained in metal storage cabinets, archives are kept in file cabinets and on bookshelves, and maps and drawings are stored in map files). Although the space meets minimum standards, the storage area has a couple of shortfalls. There is little room to view maps and documents, it is difficult to accommodate visiting researchers due to the lack of space, and the museum's physical security was found to be significantly lacking during a Park Service evaluation.

Effigy Mounds National Monument does not currently employ a full-time curator, museum technician, or archivist, and while the Park Service recognizes the need for a cultural resources management specialist, funding has not been awarded to fill this high-priority position. The monument will continue to rely on the administrative assistant who manages the

collection as a part-time collateral duty, and on assistance from seasonal staff, an archivist at the Midwest Regional Office, and curators and museum technicians from the Park Service's Midwest Archeological Center.

To best care for the monument's museum collection and archives, staff need planning documents to help guide management decisions. Unfortunately many of the park's museum management plans are either outdated or have not been completed. For example, the most recent scope of collections statement, which defines the purpose and significance of the park's museum and archival collections and guides a park's acquisition and preservation of museum objects, dates from 1992. The monument's collection management plan, which provides short-term and long-term guidance to staff in the management and care of museum objects and archives, was completed in 1997. Staff have requested funding to update the scope of collections statement and the collection management plan; staff have also asked for funds to complete an exhibit plan, a collection condition survey, and a risk assessment of the collection as a whole. Additional funding requests have been made for designing and installing new museum exhibits and exhibit cases; restoring books within the Ellison Orr collection; correcting museum deficiencies (e.g., lack of space for archival items, inadequate light monitoring, limited security, and issues with pests, such as mice and cockroaches); and cataloging, digitizing, and re-housing archival materials. To date, no funds have been received for any of these projects.

PRESERVING AND INTERPRETING AMERICAN INDIAN HISTORY AND CULTURE IS A TOP PRIORITY

The National Park Service has identified 12 contemporary American Indian groups as being culturally affiliated with Effigy Mounds National Monument: Ho-Chunk Nation of Wisconsin; Iowa Tribe of Kansas and Nebraska;



Exhibits at the visitor center feature items from the monument's museum collection, such as this slab of catlinite (a type of stone) with pictographs on each side.

Iowa Tribe of Oklahoma; Lower Sioux Indian Community in the State of Minnesota; Prairie Island Indian Community in the State of Minnesota; Otoe-Missouria Tribe of Indians, Oklahoma; Sac (earlier called Sauk) & Fox Tribe of the Mississippi in Iowa; Sac & Fox Nation of Missouri in Kansas and Nebraska; Sac & Fox Nation, Oklahoma; Shakopee Mdewakanton Sioux Community of Minnesota; Upper Sioux Community, Minnesota; and Winnebago Tribe of Nebraska.

Monument staff continue to work to establish and maintain good relationships with these groups and regularly consult with them on management issues. To date, monument staff and members of the affiliated groups have participated in three repatriation ceremonies, in which human remains and some associated objects were reburied within the national monument. In an effort to record the histories of the monument's associated American Indian groups, staff completed a series of oral histories of tribal members from the Ho-Chunk, Iowa, and Sac & Fox groups. Park staff also worked with members of the Ho-Chunk on identifying

the proper maintenance activities for the mounds. The monument has requested funds to continue this project and to interview representatives from the other culturally affiliated tribes.

Park staff have plans to submit a request for funds to complete an ethnographic overview and assessment. This document would provide a review and analysis of the park's ethnographic resources and traditionally associated groups. Despite the lack of this baseline research, park staff have incorporated the history and culture of affiliated peoples into the monument's interpretive program. For example, the park sponsors a summer cultural series covering a wide variety of American Indian themes, and an American Indian Heritage Celebration is held during some years, in which representatives from the affiliated groups put on performances, demonstrations, and symposia relating to American Indian culture and its relationship to the monument. The next American Indian Heritage Celebration is scheduled for later this year. Contemporary American Indian culture and issues are also discussed during interpretive programs and ranger-led hikes.

The monument hosts an American Indian Heritage Celebration some years that includes performances, demonstrations, and symposia relating to American Indian culture and connections to the monument.





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NATURAL RESOURCES— WIDE ARRAY OF RESOURCES ON DISPLAY THROUGHOUT THE MONUMENT

The assessment rated the overall condition of natural resources at Effigy Mounds National Monument a score of 72 out of 100, which ranks park resources in “fair” condition. Natural resource concerns at the park include adjacent development and its effect on habitat for wildlife that travel outside park boundaries, as well as the growing problem of invasive non-native plant species within park ecosystems. Despite these concerns, the park contains scarce

native prairie and savanna habitats, and harbors rare plant and animal species and supports a variety of resident and migrating birds. Park managers have, over the past ten years, used a combination of techniques to protect the remaining important native prairie habitat.

VARIETY OF ECOSYSTEMS SUPPORT MANY SPECIES

Effigy Mounds National Monument supports a high diversity of ecosystems and microenvironments, due largely to the park’s topographical variety (ranging from high bluffs to low-lying wetlands) and the region’s continental climate, variety of microclimates, and the area’s geologic

Effigy Mounds National Monument ranges from high bluffs to low-lying wetlands (pictured). As a result, the park supports many different ecosystems and microenvironments.

Effigy Mounds National Monument offers visitors opportunities to learn about the area's human history as well as chances to observe native plants and wildlife. Here, a monarch butterfly (*Danaus plexippus*) rests on a butterfly weed (*Asclepias tuberosa*).



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history and location within the Driftless Area. The monument is located in a transitional zone that covers several vegetation communities. The riparian zones, wetlands, and ponds near the Mississippi River meet the Eastern deciduous forest found within the monument's upland areas, which eventually give way to the grasslands and tallgrass prairie of the Western plains. The low-lying wetlands and ponds adjacent to the Yellow River provide critical habitat for migratory waterfowl, amphibians and reptiles, and some fishes.

As a result of the diversity of its habitats, the monument is able to support a large number of animal species: 21 mammal, 178 bird, 93 fish, 12 reptile, and eight amphibian species have been documented in the park. Also present are 831 plant species or subspecies.

A microclimate refers to the weather conditions of a small area (e.g., a confined space such as a cave, plant community, or wooded area), which tend to differ from the climate of the surrounding region. Effigy Mound's goat

prairies, aligific talus slopes, and cold air seepages are considered by monument staff to be unique and valuable resources as they create microclimates that support rare and relict (a species that has survived while other related ones have become extinct) plant and animal species that would otherwise be outside of their normal range, and add to the high level of biodiversity at the park. For example, the monument's few goat prairies are small, highly diverse prairie remnants that exist on bluff edges in the South and North Units and in the Heritage Addition. Goat prairies earned their names because they are often too steep to plow and contain dry and gravelly soils that support plants only a goat can graze. These slopes exhibit a very hot, dry, desertlike microclimate where only the most drought-tolerant species can flourish, so invasion by woody species is very slow.

The historic suppression of fire within the monument has allowed tree and woody shrub species to encroach on the rare prairie and

savanna habitats, threatening vegetation diversity. The park is attempting to manage these native prairies by clearing them with mechanical cutting and fire to limit the conversion to forest, and by reversing the loss of native grasses and forbs on prairies and savannas by planting native species. Prairies are isolated within the park, which gives them some protection from invasion by non-native species. Even so, invasive non-native plants pose a serious threat to native species in upland and riparian areas (see “Invasive Non-Native Plants a Growing Problem”).

PARK HARBORS THREATENED AND ENDANGERED ANIMAL AND PLANT SPECIES

Effigy Mounds National Monument supports at least 21 animal and plant species that are listed as either threatened or endangered within the state of Iowa, and several that are listed as species of special concern. Red-shouldered hawk (*Buteo lineatus*) and bald eagle (*Haliaeetus leucocephalus*) are two of the state-listed endangered animal species that have been found within Effigy Mounds. The populations of state-listed rare plant species include leathery grapefern (*Botrychium multifidum*), jeweled shootingstar (*Dodecatheon amethystinum*), creeping juniper (*Juniperus horizontalis*), and wild lupine (*Lupinus perennis*), among others.

The monument also contains the necessary habitat to support two federally listed endangered species—Higgins eye pearl mussel (*Lampsilis higginsii*) and the Iowa Pleistocene snail (*Discus macclintocki*). Thought to have gone extinct more than 10,000 years ago, the Iowa Pleistocene snail was rediscovered in 1940. This snail prefers uncommon habitat—algific talus slopes along limestone bluffs (locations at the opening of underground ice caves in particular)—and requires a narrow temperature range to survive. Although the snail has never been recorded within Effigy Mounds, it has been found within 20 miles of the monument.

INVASIVE NON-NATIVE PLANTS A GROWING PROBLEM

Effigy Mounds National Monument managers consider the entrenchment of invasive non-native plant species to be a growing concern. National Park Service surveys have identified 64 non-native plant species; 16 of these are considered to be invasive (i.e., have the ability to outcompete and negatively affect native species). Seven of the invasive species have moderate to high management priority—garlic mustard (*Alliaria petiolata*), common buckthorn (*Rhamnus cathartica*), Japanese barberry (*Berberis thunbergii*), multiflora rose (*Rosa multiflora*), sericea lespedeza (*Lespedeza cuneata*), reed canary grass (*Phalaris arundinacea*) and shrub honeysuckle (*Lonicera* spp.). Although these species are not yet widespread (they cover an estimated 178 canopy acres within the monument), all seven have the potential to expand and entrench themselves within the monument’s ecosystems and would be difficult to manage if they became widespread. Garlic mustard is Effigy Mound’s most prolific invasive non-native plant species, covering approximately 500-600 land acres. Park staff target high-priority invasive species with chemical herbicides and by mechanically removing them. Effigy Mounds National Monument does not receive outside assistance to manage

Park staff apply chemical herbicides to control some of the worst invasive non-native plants. Funds are needed to survey the monument for non-native species in order to determine the extent of the problem and develop treatment strategies.



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the non-native species. The park does not have the funding or staff to treat the 120 canopy acres infested with reed canary grass at this time, as this species requires several herbicide sprayings a year, prescribed burn treatment, and native species planting to control it, which is costly. A dense population of reed canary-grass has invaded much of the floodplain in the Heritage Addition.

Park managers have submitted several proposals for funding to survey the monument's non-native plant species in order for park staff to understand the level of the problem and to develop appropriate treatment strategies.

MONUMENT IS A HAVEN FOR BIRD-WATCHERS

Effigy Mounds is located along the important Mississippi Flyway, which brings migratory birds to the area to feed and rest; some birds also nest in the park. Effigy Mounds provides habitat for more than 178 known species of resident and migrating birds, including rare species and species of special concern such as the Acadian warbler (*Empidonax virescens*),

cerulean warbler (*Dendroica cerulea*), worm-eating warbler (*Helmitheros vermivorus*), and northern parula (*Parula americana*).

In the late 1990s, the park worked with the Raptor Resource Project, a nonprofit organization based in Iowa, to reintroduce peregrine falcons (*Falco peregrinus*) back into the area by establishing a reintroduction and monitoring site within the monument. Twenty-four breeding pairs now nest and reproduce near the Effigy Mounds. Scientists from the Bell Museum of Natural History and The Raptor Center at the University of Minnesota monitor the reintroduction program's progress.

Resident and migrating birds are an important resource for the monument. The annual HawkWatch weekend at the monument is the most popular event each year, drawing visitors to learn more about birds and their annual migration through talks, guided bird-watching hikes, live bird demonstrations, and hands-on activities for children. The park also hosts a bald eagle appreciation day with similar activities to educate visitors about the hundreds of bald eagles that spend winters in the park.

The monument's annual HawkWatch weekend draws visitors of all ages who want to get a closer look at birds of prey and learn more about hawk migration along the Mississippi River flyway. This year's events will take place October 3-4, 2009.





STEWARDSHIP CAPACITY

FUNDING AND STAFFING—MONUMENT NEEDS ADDITIONAL FINANCIAL AND HUMAN RESOURCES

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, Effigy Mounds National Monument had an annual operating budget of \$987,000 to support staff and fund resource protection projects. The monument has seen a steady increase in funding over the past decade; the monument's annual budget in 1998 was approximately \$509,000. Some of the additional

funds were needed to cover mandated salary and cost-of-living increases. In 2000, the monument's acreage was expanded from 1,481 to 2,526 acres, and managers now need additional funds to care for these additional resources.

Effigy Mounds' museum collection and archives, along with the mounds themselves, are maintained by staff members who lack the specialized training needed to best care for these sensitive resources. For example, the park's administrative assistant manages the museum collection and archives but has not had formal training in this discipline. The monument would like to hire a full-time museum technician to address this need. In 2001, Effigy

National Park Service Midwest Archeological Center staff and Effigy Mounds National Monument staff prepare a test pit in the parking lot.

Staff from the monument's resource education and interpretation division teach visitors about Effigy Mounds' cultural and natural resources and provide special workshops for area teachers. To meet core operations objectives, the monument needs an additional 3.73 full-time equivalent positions in this division.



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Mounds' cultural resources manager moved to another park and the monument has been unable to fill this position (or hire a cultural resources specialist instead) because of a lack of funds. To address the lack of staffing, Effigy Mounds receives assistance from staff from the National Park Service's Midwest Regional Office in Omaha, Nebraska, and from the Park Service's Midwest Archeological Center.

Effigy Mounds National Monument's natural resources program consists of just one staff member—the natural resource manager—and needs an additional permanent full-time biologist, a permanent subject-to-furlough biological technician, and three seasonal biological technicians. In summer 2009, the park received funds to begin filling some of these natural resource positions. Unfunded natural resource projects include landscape restoration, invasive non-native plant control, vegetation monitoring, and rare species surveys. Invasive non-native plants have proliferated because the monument does not have enough staff to control their spread. For example, the monument's forest understory is

being filled with, and wildflowers are being outcompeted by, garlic mustard.

Recently completed National Park Service studies indicated that both the monument's visitor and resource protection program and resource education and interpretation division also require additional staff. Effigy Mounds' visitor and resource protection program currently consists of one part-time senior law enforcement officer. According to the Park Service, the program needs an additional 1.25 full-time equivalent (FTE) positions to achieve the minimum national safety and security standards. This increase would allow the monument to hire a full-time senior law enforcement officer and a subject-to-furlough law enforcement ranger.

The monument's resource education and interpretation division currently consists of 2.77 full-time equivalent positions and the Park Service recommends that the division hire an additional 3.73 FTE positions to meet core operations objectives. Needed positions include two full-time interpretive park rangers, one full-time park guide, and additional seasonal rangers.

PLANNING—GENERAL MANAGEMENT PLAN BEING UPDATED; ADDITIONAL PLANS ARE NEEDED

Park managers are currently updating the monument's general management plan—a park's most important and influential planning document—and are scheduled to have it completed in 2009. Once the general management plan is approved and in place, staff can begin to explore the possibility of writing individual management plans as funding and staffing allows, spanning cultural landscapes, integrated pest management, vegetation, and wildlife. The park is currently drafting a resource stewardship strategy as well, which is a 15- to 20-year program planning document that sets out to determine current resource conditions at the park, future goals, and strategies for reaching these goals. An update to the long-range interpretive plan is scheduled to be completed in 2010 as well.

Staff would also like to perform a baseline survey of mammals in the monument, with a special emphasis on the assessment of threatened, endangered, and previously extirpated species, if funding can be secured in the future. An updated fire management plan was completed earlier in 2009 and is with the regional office awaiting final approval. Once the plan is approved it will help direct the use of prescribed burns for landscape restoration, while providing other fire-related guidance.

RESOURCE EDUCATION—LIMITED NUMBER OF STAFF HINDERS RESOURCE INTERPRETATION

Effigy Mounds National Monument provides as much resource education and interpretation as its lean budget and staff level allow. During 2007, the monument provided a number of interpretive programs—formal education programs, historic demonstrations, and special

KEN BLOCK



The monument's Stones, Bones, and Sticks program is a hands-on activity for children that features examples of the kinds of tools used by the mound-building cultures that once inhabited the region.

Young volunteers remove invasive non-native garlic mustard.



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events—that reached 22,269 people. The park’s chief ranger and six part-time seasonal rangers put on the interpretive programs; the park has never had a permanent full-time interpretive ranger. The monument considers this level of staffing to be inadequate to fully serve visitors and would like to add additional interpreters if funds become available. Due to a lack of staff, formal interpretive programs have been reduced to include only special events from late October through mid-June; formal on-site educational programs have also been scaled back so they are only offered in May and from mid-September to mid-October.

The monument’s visitor center is located within the North Unit. It is undersized and cannot adequately accommodate the number of visitors to the monument during the summer

months. Effigy Mounds received a grant in 2005 to update several interpretive waysides, and it has secured the funding to replace several other waysides that were installed along the hiking trails in the North Unit in the 1970s.

Various themes are interpreted within Effigy Mounds National Monument, including the earthen mounds, the Driftless Area of the region, Euro-American activity, and archaeological resources within the park. The monument sponsors an American Indian Heritage Celebration during some years, where representatives of the monument’s affiliated tribes put on performances, demonstrations, and symposia relating to American Indian culture and its relationship to the monument. In addition to interpreting the story of the earthen mounds and the people who built them, Effigy

Mounds offers natural resource focused events such as moonlight hikes, a bald eagle appreciation day, and an annual HawkWatch weekend, which are all well attended.

EXTERNAL SUPPORT—VOLUNTEERS PROVIDE INVALUABLE SERVICES

Faced with significant funding and staffing shortfalls, the monument increasingly relies on volunteers to bridge the gap between what is needed and what the staff can provide. In fiscal year 2007, 122 volunteers contributed 1,938 hours of service, helping with interpretive special events, staffing the visitor center, participating in natural resource management projects (e.g., invasive non-native plant removal), and assisting with administrative duties. The number of volunteers assisting the monument has steadily increased due to efforts to recruit interns and volunteers for special events and programs.

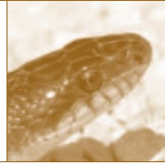
Park staff and volunteers partner to care for resources and provide visitor services at Effigy Mounds National Monument.

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).
- Donate on behalf of the park. Effigy Mounds National Monument has a donation account with the National Parks Foundation that supports the park's special events and workshops. Donations can be made to this account by sending a check made payable to: "Effigy Mounds Fund REFMA" to: The National Park Foundation c/o Effigy Mounds National Monument, 1201 Eye Street, NW, Suite 550B, Washington, D.C. 20005.
- Participate in park planning efforts. The public is invited to provide input on all park plans and studies. Check www.nps.gov/efmo for information on current planning work.
- Volunteer. Many parks are looking for dedicated people who can lend a helping hand. To learn about opportunities at Effigy Mounds National Monument, contact the park at 563.873.3491.
- 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.



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APPENDIX: METHODOLOGY

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

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

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

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



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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 Effigy Mounds National Monument 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

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