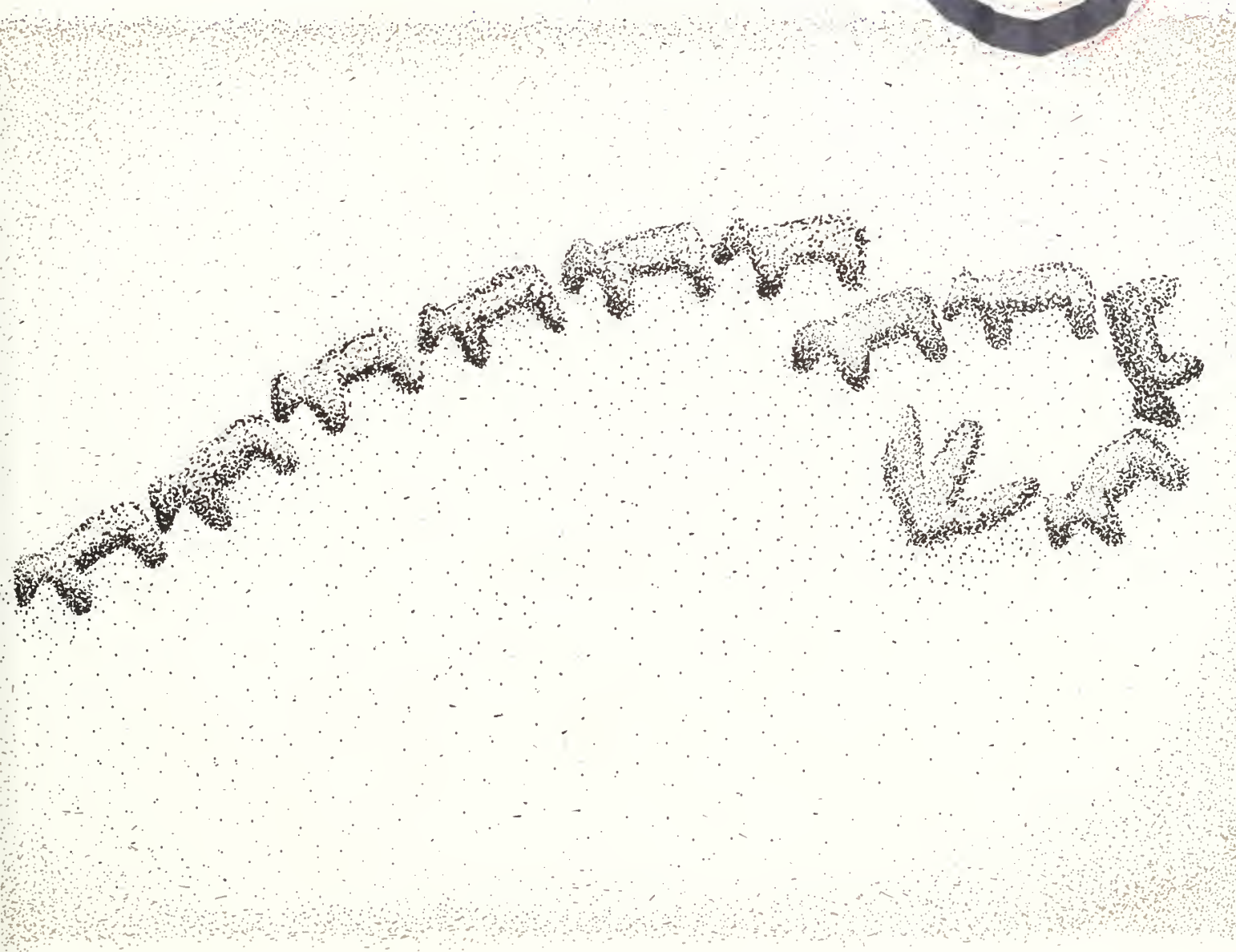


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GENERAL MANAGEMENT PLAN



Effigy Mounds National Monument

IOWA

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May 3, 1991



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general management plan

may 1991

EFFIGY MOUNDS NATIONAL MONUMENT • IOWA

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE
DENVER SERVICE CENTER

SUMMARY

5-003

Effigy Mounds National Monument was established to preserve significant prehistoric earth mounds found in northeast Iowa. Many of these are known to be Indian burial mounds. They are in a variety of forms, including effigy, linear, conical, and compound (a combination of conical and linear). The monument has about 200 mound sites – 26 in the form of bear and bird effigies. These mounds are distributed in three units of the monument, called the north, south, and Sny Magill units.

ISSUES

The actions described in this plan will ensure protection of the significant cultural resources, provide better interpretation and understanding of the area, improve visitor facilities, and provide strategies for managing new lands that have been added to the monument since the 1963 *Master Plan* was completed. The plan addresses the following issues.

The integrity of the mounds is being damaged by people and natural forces, especially at the Sny Magill unit. Endangered, threatened, or rare federal- and state-listed species in the monument need protection. Cultural sites near the monument that are closely related to monument themes also need to be identified and protected.

The types and levels of public access to the mounds in the units need to be determined, including access for individuals with disabilities. The 1963 *Master Plan* proposes extensive development in the south unit and does not address the recently added Sny Magill unit. Parking capacity for boat launching at Sny Magill, the headquarters visitor center, and the south unit trailhead are inadequate at certain times during the year. Some north unit trails require heavy maintenance, and certain areas create safety problems for visitors.

THE PLAN

There will be a broad range of research projects to support cultural and natural resource management actions. Visitor use and development concepts for the three units are as follows.

The plan includes a new alignment for the south unit trail, to increase safety and improve the experience for visitors hiking to the Marching Bears mound group. The trailhead will be at the existing visitor center parking area. This trail relocation will include a pedestrian tunnel under Iowa 76 and a footbridge over the Yellow River.

The Sny Magill mounds group will be preserved in its current undeveloped status, with minimal visitor use. However, a state project to expand the gravel fishing access parking area and pave the existing boat ramp at Sny Magill will be permitted by the National Park Service.

A portion of the Fire Point trail in the north unit will be realigned, and a view platform will be constructed at Great Bear Mound. The monument boundary will be expanded to include state and railroad lands between the north unit and the Mississippi River, which includes prehistoric village sites, so that this land may eventually be acquired. The railroad right-of-way will be acquired only if the line is abandoned, and the state land will be acquired only if donated by the state of Iowa.

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PURPOSE AND NEED FOR THE PLAN

Effigy Mounds National Monument, in northeastern Iowa, was established by presidential proclamation in 1949 to preserve a representative and outstanding example of a significant phase of the prehistoric American Indian mound building culture and to protect wildlife, scenic, and other natural values of the area.

The monument includes 1,475.5 acres in three units – north, south, and Sny Magill (see Region and Vicinity maps). These areas preserve over 200 mound sites, dating to 2,500 years old, including 26 in the shape of bird and bear effigies. Indian burial mounds are found in a large part of the United States; however, effigy mounds are found in a relatively small area in northeastern Iowa, southeastern Minnesota, and western Wisconsin. The monument's Marching Bears mound group is one of the finest in the country.

The north and south units are on adjacent bluffs next to the monument headquarters about 5 miles north of McGregor, Iowa, overlooking the Mississippi River. Sny Magill, about 11 miles south of the headquarters area, is in the river bottomland and contains the largest extant concentration of Indian mounds (about 100) in the country.

This *General Management Plan* (hereafter referred to as GMP) identifies problems and issues for Effigy Mounds, and presents a series of actions for solving identified problems. This plan also summarizes environmental compliance procedures completed for the plan, including documentation for endangered species, floodplains, and wetlands protection. The plan has been prepared in consultation with the state historic preservation officer and the Advisory Council on Historic Preservation. The draft *General Management Plan/Environmental Assessment*, which analyzed the proposal and three alternatives, went out for public review in June 1990. Based on the environmental analysis in that draft plan and public and agency comment, it has been determined that this plan will not significantly affect the quality of the human environment, and an approved finding of no significant impact is appended to this plan along with a summary of comments (see appendix A). An environmental impact statement will not be prepared.

MANAGEMENT ISSUES

There are two basic reasons for preparing a new GMP for Effigy Mounds National Monument. First, no general management planning has been done since the *Master Plan* for the area was approved in 1963, and although some aspects of that plan are still valid, others need updating. Second, lands have been added to the monument since the *Master Plan* was approved. A strategy for managing these new lands needs to be incorporated into a new plan. Other issues addressed in this GMP follow.

Cultural/Natural Resources

A variety of natural forces and human impacts are damaging the mounds' integrity. Of particular concern is the shoreline erosion occurring on the mounds at Sny Magill. Land use changes and vegetation succession have altered the prehistoric landscape in the monument. When the Mound Builders lived in the area, the landscape was a woodland/prairie vegetative mix maintained by a fire regime (Blewett 1986). Today, prairie remnants exist in small patches and, without appropriate management, encroachment of woodland species will increase.

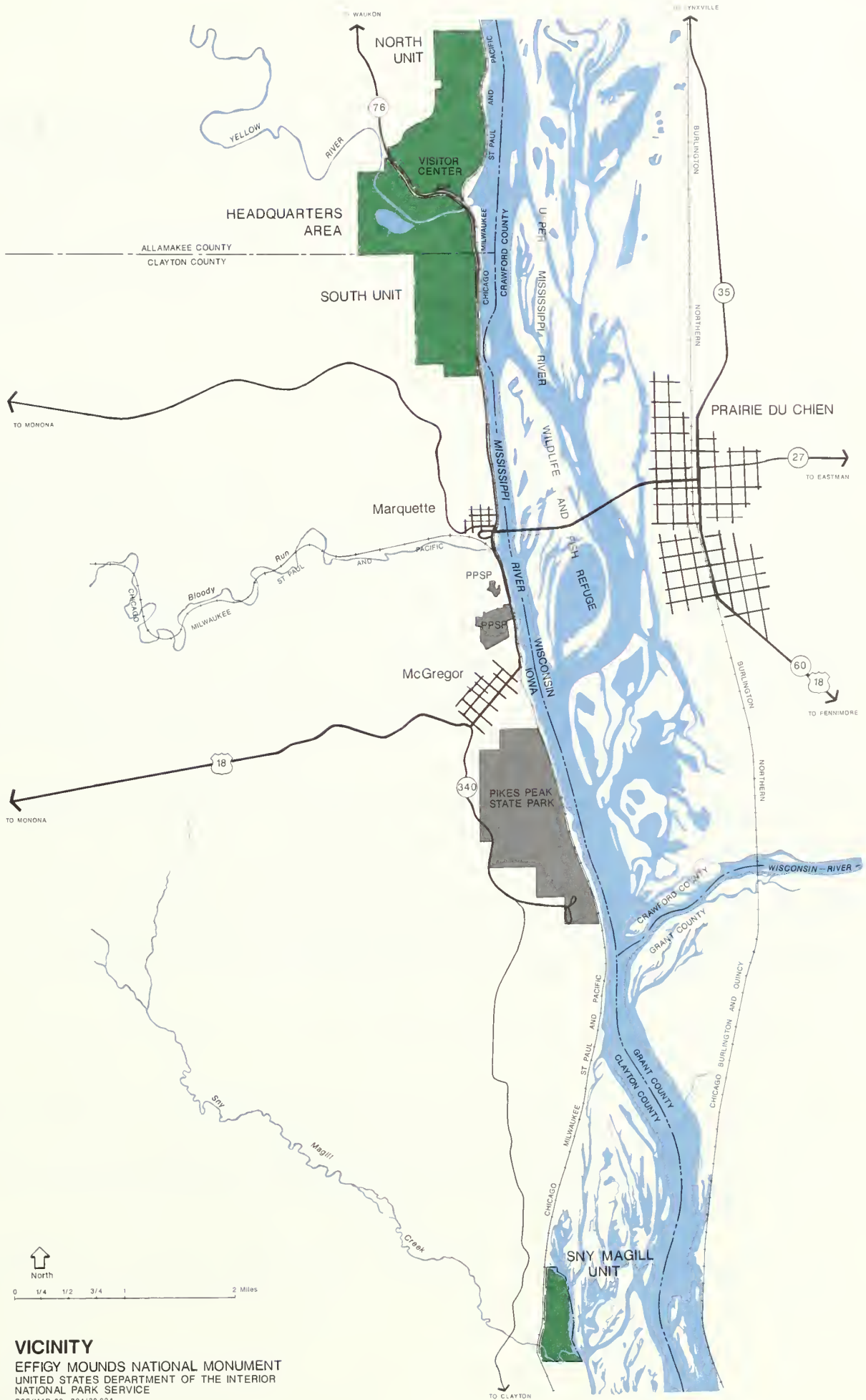


North

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REGION

EFFIGY MOUNDS NATIONAL MONUMENT
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE



VICINITY

EFFIGY MOUNDS NATIONAL MONUMENT
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DSC/MAR 89 394/20,004

Other cultural sites near the monument, including additional mounds, the old military road, Red House landing, prehistoric rock-shelters, and the FTD site, play a role in the Effigy Mounds story. These sites are subject to natural- and human-caused disturbances and need protection. Federal law requires GMPs to describe any proposed modifications to external boundaries and the reasons for making any changes.

Limited baseline data suggests that rare animal and plant species inhabit the monument, and these warrant special management consideration. Based on the results of an ongoing endangered species survey, the GMP identifies important habitat in the monument and determines appropriate management actions to protect endangered species and their habitat.

Visitor Use

Approximately 40 of the mound sites in the monument are accessible to and interpreted for the public. For all practical purposes, the mounds at Sny Magill, which is the largest concentration of mounds in the monument, are not accessible to the public. A lack of trail facilities, signs, and dense vegetation discourage visitor use in the Sny Magill mounds area. The south unit's Marching Bears mound group, the best example of effigy mounds in the monument, is accessible only by a 4-mile round-trip hike on an administrative access road. The trailhead is at a state day use area, and visitors must walk across a railroad track and state highway to get to the road/trail in the monument. The GMP determines the appropriate levels and types of public access to the mounds.

Increased visitor activity, such as canoeing and camping along the Yellow River, sport fishing and boating at Sny Magill, trespass snowmobiling, four-wheeling along the Yellow River road, hiking, photography, resource study, and cross-country skiing, has potential for impacting the monument's resources. The GMP includes a policy for determining acceptable summer and winter recreational use.

The only identified carrying capacity issue is overcrowding at the visitor center parking area during a few peak weekends in the fall. This issue is addressed in accordance with Public Law 95-625, using a facility carrying capacity approach that assesses impacts on monument resources.

Some monument facilities, such as hiking trails, do not accommodate the needs of visitors with disabilities. Under certain circumstances, monument staff can provide escort services for physically restricted visitors. The GMP evaluates the potential for visitors with disabilities to access the monument and recommends areas for increased accessibility.

General Development

The 1963 *Master Plan* recommended extensive development, including a visitor access road and parking area in the south unit; this need has been questioned in recent years. Based on a determination of appropriate visitor use, this GMP determines levels of activity for each monument unit and defines the extent of facility development. Areas of special concern include boating and fishing access at Sny Magill, visitor access to the Marching Bears mound group, canoe access to the Yellow River, and public use of the Yellow River road.

As mentioned above, existing parking is inadequate to serve the public during peak periods (fall color weekends). The GMP analyzes parking needs at the visitor center and at designated trailheads.

Current use of the low-standard boat launch at Sny Magill consistently exceeds the existing capacity of the informal parking area during summer months. No comfort facilities or other amenities are provided. The GMP determines area parking, launching, and other facility needs.

Existing trails, especially switchbacks in the north unit, require a high level of maintenance. Overlooks and steep areas present potential safety problems for visitors. The GMP analyzes alternative trail alignments and the general need for safety barriers.

MANAGEMENT OBJECTIVES

The following objectives guide the preservation, visitor use, and development decisions for the monument. They were prepared by National Park Service (NPS) managers in the monument's *Statement for Management* (NPS 1988).

Cultural Resource Preservation

Preserve and protect the integrity of prehistoric American Indian burial mounds.

Restore mounds, with careful documentation, to their original profile in those areas where research has deemed it necessary.

Eliminate destructive tree growth and animal burrowing on the mounds.

Natural Resource Management

Restore and perpetuate the ecological conditions that existed during the mound building period to protect and maintain the burial mounds and their environs.

Interpretation, Visitor Use, and Visitor Orientation

Foster appreciation and understanding of the Indian burial mounds, the culture of the people who produced them, and the forest in which they lived by providing appropriate and safe interpretive programs, visitor use activities, and orientation programs.

Maintain the Ellison Orr archeological and geological collection and manuscripts and library collection in a manner conducive to appropriate scholarly research and use.

Cooperation

Cooperate with federal, state, and local government agencies; private organizations; and individuals (including historical and archeological societies) to

protect and preserve the mounds

ensure compatible land and water use in areas adjacent to the monument

conduct research and investigation of the mounds and the Indian culture

Development

Ensure that facilities and related services for resource protection and visitor use and safety are compatible with resource preservation objectives.

Ensure that facility carrying capacity is adequate to meet visitor use demand.

Information Acquisition

Encourage and participate in efforts to acquire information, through research and other means, to facilitate development of the best possible strategies for preserving the remains of the prehistoric American Indian mound building culture and enhancing opportunities for resource-compatible public use and enjoyment.

DESCRIPTION OF THE AREA

REGIONAL ENVIRONMENT

Location

Effigy Mounds National Monument is in the northeastern corner of Iowa, on the west bank of the Mississippi River. Monument headquarters is about 5 miles north of Prairie du Chien, Wisconsin, and McGregor, Iowa. The monument lies within Allamakee and Clayton counties and is in the second congressional district. Containing 1,475.53 acres (75 percent Allamakee County, 25 percent Clayton County), the monument is geographically divided into two sections: Headquarters (north and south units) and Sny Magill. The Sny Magill unit is on Johnson's Slough of the Mississippi River, 11 miles south of monument headquarters.

Geography

The monument is in the driftless (nonglaciaded) zone, a geologically unique area of erosional topography drained by an intricate system of rivers and streams.

The north and south units are predominately uplands with steep bluffs and old open fields on the highest upland flat areas. The uplands above the 900-foot elevation level comprise about 50 percent of the monument area. The area of steep slopes rising from the floodplain up to the 900-foot level make up about 25 percent, while the remaining 25 percent of monument lands consists of floodplains, water impoundments, and waterways.

There is approximately 500 feet of vertical relief in the monument, from the lowest point at the mouth of the Yellow River (600 feet above sea level) to the highest point in the south unit (1,084 feet above sea level).

Access

Transportation to the area and access to monument headquarters is provided by State Highway 76 (IA 76). This road parallels the bank edge of the Mississippi River north of Marquette, Iowa, for 3 miles along the eastern edge of the monument. Access to the Sny Magill unit, a gravel road off the paved highway, is from IA 340 south of McGregor.

Land Use

Land use in the monument is primarily resource preservation and recreation. The open fields, forested slopes, and river floodplain offer visitor activities such as hiking, mound interpretation, scenic viewing, and river boating. A 6-acre developed area at the monument headquarters includes the visitor center, parking lot, access roads, housing, and a maintenance area.

Lands adjacent to the monument boundaries on the north, west, and south are in private ownership. This includes farmlands and woodlands with adjacent Indian mounds, such as the McCormick and Ferguson properties, and other lands with residential development or agricultural uses, such as the Trudo and Schafer properties. Lands on the east boundary are owned by the

state of Iowa and the Chicago, Milwaukee, St. Paul, and Pacific (Soo Line) Railroad, which is on the west side at Sny Magill. Those lands suitable on the bluff tops are used principally as cropland or pastures. On the steeper woodland slopes and along the Yellow River valley timber is harvested. The state-owned land is unused woodland adjacent to the Mississippi River.

CULTURAL RESOURCES

Prehistoric Resources

Along the high bluffs and lowlands in the Upper Mississippi River Valley are numerous prehistoric Indian burial mounds that are unique in North America. Although different groups of prehistoric Americans built burial mounds at various times and places, in southern Wisconsin and adjacent areas in Illinois, Minnesota, and Iowa, they built some in the shape of birds and other animal effigies. The mounds represent a number of Woodland cultures, including the Red Ocher, Hopewell, and Effigy Mound Builders.

The oldest mounds in the Mississippi Valley belong to the Red Ocher culture of the early Woodland period. One mound excavated in the monument is about 2,500 years old.

The next major cultural division is noted in pottery and the use of many materials obtained from distant sources. The remains from this period are called Hopewellian, a culture dating from about 100 B.C. to A.D. 600. Several mounds excavated in the monument are of the Hopewellian period. Three of these conical-shaped Hopewellian mounds are adjacent to the visitor center.

The Effigy Mound Builders occupied the land in the monument area from a time overlapping the Hopewellian period until near historic times. Archeological excavations indicate the Effigy Mound Builders were probably replaced by the Oneota culture about A.D. 1300 or 1400. Their cultural remains indicate they constructed mounds in effigy forms, used copper for tools rather than ornaments, and buried their dead with few if any intentional offerings of a lasting nature. These Oneota people placed a strong emphasis on agriculture and on life in villages.

The advent of the fur trade era and European settlement eventually ended Indian occupation of land now in the monument.

There are about 200 known prehistoric mound sites in the monument, 26 in the form of visible bear and bird effigies. The remainder are conical (dome-shaped), linear, or compound (a combination of conical and linear) shapes. Some mounds are monumental in size. The Great Bear mound is 70 feet across the shoulders and fore legs, 137 feet long, and 3-1/2 feet high. The Marching Bears mound group is a unique cluster of 10 bear, three bird, and two linear mounds in the monument's south unit.

The monument's mounds have been dated from 500 B.C. to A.D. 1300. Built throughout this period, the earliest mounds are simple conical structures. The linear and compound mounds first appeared about 2,000 years ago. Effigy-shaped mounds first appeared about 1,500 years ago.

The more than 100 mounds in the Sny Magill unit represent the largest concentration of mounds in one compact group. The majority of the remaining mounds are on the ridgetops in the north and south units. A number of the mounds that were once in the Yellow River floodplain and open field areas were obliterated or partially destroyed by early farming activities.

Approximately 10 percent of the mounds have been excavated, with the artifacts stored or displayed in the visitor center. Future excavations are not planned; the current emphasis is on preservation and nondisruptive mound study.

There are 18 rock-shelters in the north and south units (Petersen 1985). These small rock-shelters were used as either permanent or temporary habitations. Complete studies of these areas have not been conducted. A study of the rock-shelters may lead to further information on the hunting-gathering lifestyle of the Mound Builders.

There are also small mound groups in areas adjacent to the monument. These include conical, linear, and a few small effigy mounds. They occur on the Ferguson property west of the headquarters area, on the McCormick property north of the monument, and on the Elwick property west of the Sny Magill unit. The significance of these adjacent resources has not been determined. Some of these mounds have been adversely affected by farming, logging, and pothunting.

Historic Resources

In addition to its unusual archeological resources, the monument has several historic resources. It is across the Mississippi River from historic Prairie du Chien, Wisconsin, an important point in the exploration and settlement of the upper Mississippi Valley. Prairie du Chien is at a strategic site where the Wisconsin River joins the Mississippi. Louis Jolliet and Father Marquette were the first white men to document their visit to the northeastern Iowa region while exploring the Wisconsin and Mississippi rivers in 1673. Others followed – exploring, building forts, and developing Indian trade. The first known mention of the Effigy Mounds area appears in Jonathan Carver's *Travels Through the Interior Parts of North America in the Years 1766, 1767, 1768*.

A number of historic sites are found in the monument. The military road built in 1840 by the U.S. Army between the Mississippi River and Fort Atkinson, Iowa, crosses the southern half of the south unit. Remnants of old roads can be found throughout the monument.

Red House landing, a small settlement below Hanging Rock in the north unit, was a clamming town before the turn of the century. In the 1840s settlers harvested firewood for steamboats on the Mississippi River. The wood was cut on the ridgetops in the area that is now in the north unit overlooking the river. It was dumped down by chute to the riverbank at a steamboat stop called York landing. Other trees were felled from the area to furnish steamboat fuel to Red House and other landings. Adjacent to Red House landing, but outside the monument, is a prehistoric village site. Neither site has been archeologically studied.

Also historically important, but outside the monument, is the Jefferson Davis sawmill site. In 1829 the sawmill was constructed just west of the monument's current boundary. Timbers and planks from the mill were used to construct Fort Crawford at Prairie du Chien, Wisconsin. Jefferson Davis was later elected president of the Confederate States of America. About 1834 the sawmill was abandoned, and a few years later was burned to the ground.

In 1881 Theodore H. Lewis and Alfred J. Hill surveyed the mound groups of the Mississippi River valley. The mounds they mapped in 1892 included the Marching Bears mound group and a number of mounds that were destroyed before the monument was established.

On August 10, 1949, the first 1,000 acres to be included in the monument passed into federal ownership. Another 204.36 acres were conveyed to the United States by the Iowa General

Assembly on April 14, 1952. An act of Congress on May 27, 1961, added about 263 acres and about 100 mounds to the monument at Sny Magill (see appendix B).

National Register Status and Context in the National Park Service

The entire monument is on the National Register of Historic Places. In addition, the monument's mounds are on the List of Classified Structures and on the state of Iowa's archeological sites inventory. The national register significance is based on the major prehistoric remains in the monument.

The thematic framework for the monument is *indigenous American populations*, with subthemes of the *earliest inhabitants*, *post-archaic and pre-contact developments*, and *prehistoric archeology* (NPS 1987). This includes facets of archaic and post-archaic adaptations of the Mississippi Valley region, and prehistoric religion, ideology, and ceremonialism. Secondary historic themes are *European exploration and settlement*, *westward expansion*, and *society and social conscience*.

NATURAL RESOURCES

Geology

Sediment layers of limestone and sandstone form the bedrock of northeastern Iowa. The oldest layer exposed at the monument is the Jordan sandstone formation. Visible along the base of the east-facing bluffs, it serves as an important aquifer for the area. Overlying the Jordan sandstone is the Prairie du Chien formation of dolomite limestone, which forms the dominant geologic strata exposed along the river bluffs.

The rugged terrain of the area resulted from water eroding and dissolving the limestone bedrock. During the ice ages, this area was untouched by the continental glaciers. The portion of northeastern Iowa and southwestern Wisconsin that was completely surrounded by glaciers is known as the driftless zone. Although the area was not directly affected by glaciers, their meltwaters carved out the Mississippi River valley.

Soils

Soils in the south unit (Clayton County) are moderately sloping to very steep, well-drained soils formed of loess or loamy sediments derived from limestone on uplands. Specific soils consist of well-drained, moderately permeable soils on uplands, upland ridges, side slopes, and stream benches formed in loess. Slopes range from 2 to 40 percent. Additional site-specific soils information on monument lands in Clayton County is available in the 1982 *Soil Survey of Clayton County, Iowa*.

Soils in the north unit (Allamakee County) are well-drained soils formed in loess, loess clayey pedisements, and loess over clayey pedisements on 5-14 percent upland slopes; loamy colluvium on 14-70 percent upland slopes; well drained, loamy or silty alluvium on 9-25 percent terrace slopes; and poorly drained, silty alluvium on flooded 0-2 percent bottomlands along the Yellow River.

In contrast, soils in the Sny Magill unit (Clayton County) are nearly level to gently sloping (0-5 percent), poorly drained to well-drained soils formed in silty, loamy, and sandy alluvial sediments on bottomland and stream benches. Permeability is moderate with a seasonal high water table, while surface runoff is slow to medium.

Vegetation

The monument is in a transition zone of several vegetation communities. The microclimates produced from the north-facing slopes and the influence of the river valley provides habitat for a mixture of plants found nowhere else in Iowa.

The prehistoric vegetation on the uplands in the monument was a forest dominated by sugar maple and basswood, with scattered prairie openings on the ridge tops and bluff edges (Blewett 1986). Current vegetation types are probably similar to the mound building period, with the majority of the uplands and bluffs being forested. However, openings are now dominated by exotic grasses and pockets of prairie species, and pioneer species of shrubs, saplings, and small trees are gradually encroaching into the openings.

Vegetation at the north end of the north unit includes a variety of trees. Dominant species are white oak, shagbark hickory, red oak, bigtooth aspen, and basswood. Interspersed species are ironwood, blue beech, eastern red cedar, and chinquapin oak.

The south end of the north unit is dominated by sugar maple, red oak, and shagbark hickory. Large stands of mature bigtooth aspen are found where the forest and old pasture border. Understory species include shagbark hickory, basswood, and sugar maple.

The forest of the south unit is dominated by sugar maple and red oak. Also common are large white oak and shagbark hickory. Sugar maple dominates along the drainage on the west side of the unit.

The Sny Magill unit, in the Mississippi River floodplain, has vegetation dominated by silver maple, elm, and green ash. Swamp white oak is also common in this area.

Old open field areas in both the north and south units have varying degrees of native prairie species and exotic grasses/weeds. In vegetation surveys conducted by Howell (1983) and Blewett (1986) in the south field area of the north unit, prairie flora were virtually nonexistent. Exotic domestic grasses, such as smooth brome and Kentucky bluegrass, dominate the area. Pioneer tree species are invading some of the field. Blewett's study shows that these two exotic grass species and the native Canada goldenrod are dominant species in the old south unit field area. Prairie species were not common, but were found more frequently than in the north unit. Blazing star is dominant, but Indian grass and little bluestem are also found.

The old open field area of the south unit is a mixture of forbs and grasses with scattered shrubs and small trees. The area is dominated by Eurasian grasses but also includes a 50 percent increase in diversity (Blewett 1986) of prairie species over that of the north field of the north unit. Numerous prairie species include Indian grass, cream gentian, blazing star, black-eyed Susan, and stiff golden rod.

Dr. Blewett's 1986 study identified 21 bluff prairie remnants, of which 11 sites are suffering from invasion of woody species and need management to maintain their integrity.

None of the vegetation studies to date has made an extensive study of aquatic plants in the monument.

Water Quality

Surface water quality testing in the monument and on adjacent rivers and streams has been limited. One water quality study and survey has been completed on the Yellow River. The results of the 1982 *Yellow River Rainfall Runoff and Low-Flow Water Quality Study* (University of Iowa) indicate that the most notable effects of the runoff were increased total solids and associated organic nitrogen, total phosphate, BOD, metals, and pesticides. The impact of these contaminants on stream biota is unknown. Pesticide levels were low and below acute toxic levels. Results of the study demonstrated very good water quality throughout the entire Yellow River reach. Based on *A Survey of the Benthic Macroinvertebrate Survey* (University of Iowa 1981), the densities, number of taxa, and types of benthic macroinvertebrates indicated generally good, long-term water quality in the Yellow River.

Results of the *Summer Water Quality Survey of the Sny Magill Creek Basin* (University of Iowa 1978), which included bacteriological, chemical, physical, and biological sampling, indicates that the water quality of Sny Magill Creek is good throughout the creek's reaches. However, elevated ambient water temperatures were noted at all Sny Magill sampling sites, which were probably caused by decreased groundwater recharge. Dissolved oxygen concentrations exceeded the minimum allowable concentration of 5.0 mg/l for a class "8" cold water. In addition, several monitoring stations on Sny Magill Creek during the 1978 water quality survey exhibited unusually high fecal coliform concentrations 230,000-330,000 organisms per 100 ml, well above the 50-1,200 organisms per 100 ml limit.

Air Quality

Effigy Mounds National Monument is designated as a class II clean air area under the prevention of significant deterioration program, as enacted by the Clean Air Act, amended on August 7, 1977.

The nearest air quality monitoring station, 65 miles south of the monument at Dubuque, Iowa, is maintained by the state of Iowa. The data indicates that sulfur dioxide levels are below national ambient air quality standards, and carbon dioxide levels are above the 8-hour national standards, probably because of heavier automotive and increased traffic conditions in the city. Particulate levels, although important, are unknown or not being monitored at this time.

Wildlife

The status of fish populations in the monument is unknown. Fishing under state regulations is permitted in the monument.

A number of species of reptiles are found at the monument, although their populations are unknown.

Approximately 291 species of birds nest in or migrate through the monument and surrounding area. The once extirpated wild turkey is now nesting in the monument. The Yellow River floodplain has

been identified as one of about 12 nesting sites and one of two multiple nesting sites of the red-shouldered hawk in the state. Hawk nesting has also been documented at the Sny Magill unit.

A formal wildlife survey has not been conducted within the monument. Observation records show that the status of wildlife common to the eastern hardwood ecosystem are well represented here. Data base information on wildlife species in the monument is being collected. Occasional sightings of gray fox and coyote occur, and evidence shows that bobcat, black bear, and river otter are in the area.

Northeast Iowa has three species of land snails. There are land snails in the monument, but species types and population levels have not been documented.

Threatened or Endangered Species

There are two federally listed endangered species observed seasonally in the monument area. The endangered bald eagle (*Haliaeetus leucocephalus*) migrates through the monument area in the spring and fall and resides in the area for breeding and wintering. Sightings have increased along the Mississippi River each year, but no specific nest or roost trees have been identified in the monument. Current species populations are unknown. The historic breeding range of the endangered peregrine falcon (*Falco peregrinus*) includes this general area. Peregrine falcons have been sighted during migration, but there is no known resident peregrine use in the monument.

Several other federally listed threatened or endangered species have been reported outside but near the monument, in Allamakee and Clayton counties. The threatened northern wild monkshood (*Aconitum noveboracense*) can be found specifically on north-facing slopes, and the endangered Iowa pleistocene snail (*Discus macclintocki*) prefers habitat associated with algific talus slopes. The endangered Higgin's eye clam (*Lampsilis higginsii*) is found in the Mississippi River channel bottoms.

State-listed threatened or endangered species in the area include the red-shouldered hawk (*Buteo lineatus*), the river otter (*Lutra canadensis*), and the jeweled shooting star (*Dodecatheon amethystinum*). In addition, several species are currently being evaluated for state listing, including the brown twayblade (*Liparis lilifolia*), leather grape fern (*Bothrychium dissectum roman obliquum*), and the spotted sucker (*Minytrema melanops*).

The red-shouldered hawk is a year-round resident in the Effigy Mounds area. Three pairs nest in the monument (Stravers 1989). Two nesting sites are in the Founders Pond/Yellow River bottomland area, and one site is in the center of the Sny Magill unit. Their habitat requirements for nesting are mature floodplain forests with a well-developed overhead tree canopy. Primary tree species used for nesting are cottonwood and silver maple over 18 inches in diameter. For hunting, their habitats are wet areas, marshy clearings, and ponds. The critical time of disturbance for the red-shouldered hawk starts in late February/early March (nest building and early nesting) and continues up to mid June (fledgling stage development of young).

Local population of river otters in the Effigy Mounds area are stable and considered low. Tracking, sighting, and recovery records indicate that they inhabit the mouths of the Yellow River and Magill Creek on the Mississippi River (Iowa Department of Natural Resources 1988). Otters require habitats of floodplain deciduous hardwood forest/wetlands and associated backwater areas with wetland emergents, cattails and brush piles, which serve as cover vegetation. Critical times of

disturbance for the river otter are during spring rearing (March through early May). Otters generally have adapted quite well to human presence and activity.

The jeweled shooting star is typically found on dry shaded bluffs. They require moist sandstone and limestone cliffs, ledges, and talus slopes, which are found mostly along the Mississippi River.

Several species of special concern found in the monument have no legal status. These include the hooded warbler, southern woodrush, and the pallid shiner.

Floodplains and Wetlands

The estimated 100-year and 500-year flood levels in and adjacent to the north and south units between river miles 639.0 and 636.0 minimally affect monument lands (see Floodplain map). The 100-year and 500-year flood levels along the north and south units are about 631.0 and 633.0 feet above mean sea level (MSL), respectively. The entire Sny Magill unit is within the 100-year and 500-year floodplains, which are at 627.0 and 630.0 feet above MSL, respectively, in that area. Periodic and seasonal flooding is common, causing complete or partial inundation of the Sny Magill unit for short periods, usually in the spring.

Wetlands in the monument include the seasonally flooded bottomlands and four seasonally fluctuating ponds in the south unit. The ponds are adjacent to the Yellow River and total approximately 65 acres. These ponds are also in the 100-year floodplain. Limited information is available on these wetlands.

Prime and Unique Farmlands

According to the Soil Conservation Service (SCS) classification system for prime and unique farmlands, no soils on lands in the monument (north, south, and Sny Magill units) are classified as prime and/or unique farmlands. There are bottomlands near the Yellow River west of the monument that would qualify as prime farmland (SCS, personal communication, Aug. 26, 1988).

EXISTING DEVELOPMENT

NPS Facilities

Existing facilities at the headquarters area include the visitor center/headquarters building (1960), the superintendent's and chief ranger's three-bedroom residences (1960), the three-bay maintenance shop building with office and storage (1960), the single-space garage for the superintendent's vehicle, the small metal storage shed, and the small well pump house. Additions include a closed-in artifact storage room (1984) within the existing visitor center and a storage room (1983) for flammable liquids as part of the maintenance building. The north unit has a system of trails and overlooks. A gravel road, boat ramp, and parking area at Sny Magill are maintained by the state of Iowa's Department of Natural Resources (Iowa DNR) under a special use permit (see Existing Development maps for these units).



FLOODPLAIN MAP NORTH/SOUTH UNITS

EFFIGY MOUNDS NATIONAL MONUMENT

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1000 1500 2000 4000 Feet

EXISTING DEVELOPMENT NORTH/SOUTH UNITS

EFFIGY MOUNDS NATIONAL MONUMENT

UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

DSC APR 89 394 20.007



EXISTING DEVELOPMENT
SNY MAGILL UNIT

EFFIGY MOUNDS NATIONAL MONUMENT
UNITED STATES DEPARTMENT OF THE INTERIOR

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Roads and Railroads

Two roads bisect the headquarters area – IA 76 on the north side of the Yellow River and an undesignated dirt road to the south side of the Yellow River. The Soo Line parallels the eastern boundary of the monument in the headquarters area. It is on a narrow strip of land between the monument and state of Iowa lands adjoining the Mississippi River. The Soo Line forms the western boundary of the Sny Magill unit.

Adjacent Facilities

The Iowa DNR's Parks Division administers two areas adjacent to the south unit along the Mississippi River, directly east of the monument. The northernmost area is a designated day use picnic, parking, and boat/canoe launch area. It also serves as trailhead parking for national monument trails in the south unit. The other day use area to the south is a more formalized/developed picnic area that shares common access to state land and adjacent river residences. Additionally, the state administers the land to the east of the monument along the eastern boundary of the north unit between the railroad and Mississippi River; there are no facilities and the area is not open for public use.

VISITOR USE

Activities

Effigy Mounds National Monument is a day use area; camping is not permitted. Visitors originate primarily from the Midwest. The primary visitor use is hiking along the trail system. The trail system in the north unit is the most highly developed, with a total walking distance of about 6 miles. Various vegetation types are found along the trails, and scenic views of the Mississippi River are available from several bluffs.

About 60 percent of the visitors hike part of the trail system during the peak fall season. The south unit's trail system is on a network of old roads that are also used for administrative access. The mounds area at the Sny Magill unit is not accessible for public hiking and is an undeveloped area. The Iowa DNR maintains a double-wide public boat launching ramp at Sny Magill under a special use permit.

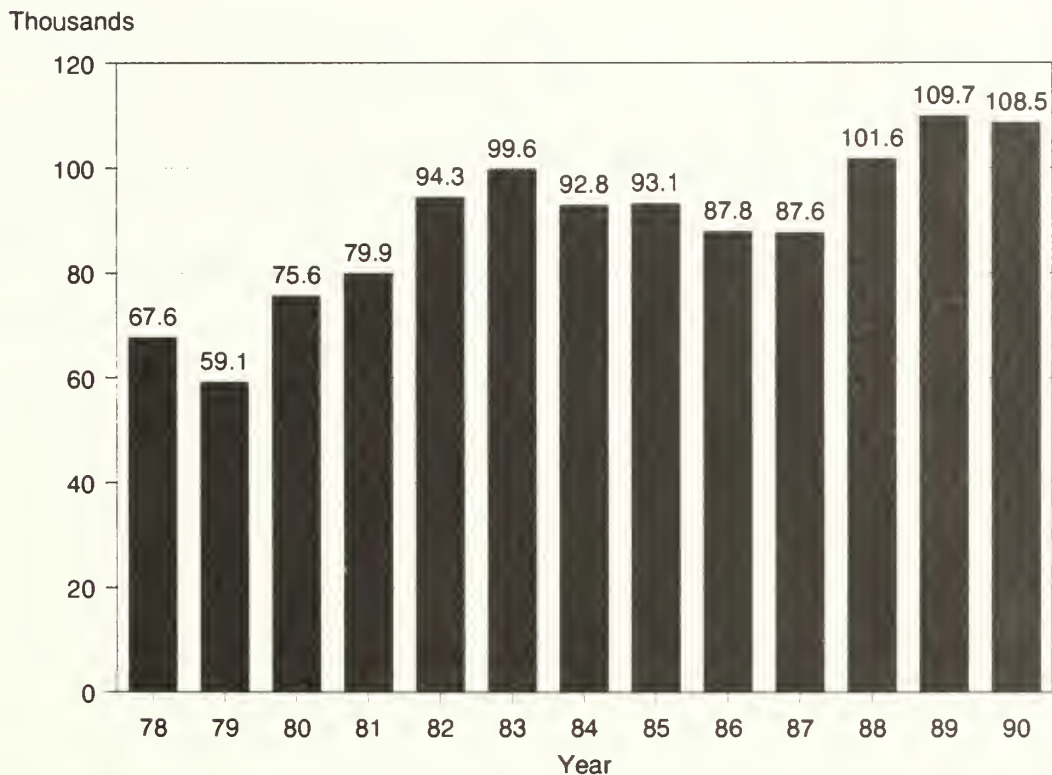
A variety of local, state, and federal government agencies provide for diverse outdoor recreational resources, facilities, and programs in the monument vicinity. These agencies play an active role in meeting public demands for recreational services and facilities. Iowa's *State Comprehensive Outdoor Recreation Program* (Iowa SCORP 1988) identifies various needs for recreational facilities in the surrounding 11-county area. Based on recreation standards, the SCORP shows a deficiency in boat ramp lanes and dock slips. Recreational activity participation levels reflect a high interest in fishing.

The SCORP also identifies critical statewide issues requiring planning and programming priorities to guide the actions needed over the next five years. SCORP issues related to Effigy Mounds National Monument are the acquisition, development, and management of fishing resources. Subsequent actions needed are shoreline protection and acquisition, development, and maintenance of fisherman access.

Following hiking to view the mounds and scenery, boating on the waterways in and adjacent to the monument is the next highest form of visitor use. Most of this occurs on the Mississippi River near Sny Magill. Fishing and canoeing on the Yellow River also account for some activity. Other forms of recreation such as off-road vehicle use, snowmobiling, horseback riding, and picnicking are prohibited in the monument.

Existing and Forecasted Use Levels. Following are reported visitor use levels for the years 1978 to 1990 (see table 1).

TABLE 1: VISITOR USE LEVELS — 1978-1990



Many visitors come during the summer and during fall color weekends, typically in October. The number of visitors that come annually to see the fall color is approximately 15,000. This is based on seven years of peak visitation data on the first four October weekends. On the average, about 63 percent of all visits recorded at the visitor center in October occur on these weekends. The average October weekend day has about 1,300 visitors.

The visitor center parking lot has a capacity of about 60 vehicles. Additional space on the adjacent grass area near the parking lot is provided for another 65 vehicles. During heavy visitation days, parking overflows onto the grass; most of these days are during the fall. The monument is open from 8 a.m. until 7 p.m. on October weekends. On the average, there are about six to 10 days in October when the parking lot overflows. The overflow period begins about noon and lasts until about 4 p.m. With visits spread out over the day, the parking lot has handled up to 500 vehicles

a day. However, usually the visitors bunch up, and if there are 350 or more vehicles in a day, the parking lot overflows for some period during the day.

Visitors to Sny Magill from April through November usually come to fish, and use is more evenly dispersed. Total annual use was estimated to be about 8,700 in 1988.

The forecasted annual visits to Effigy Mounds in the year 2003 is 106,300, with a possible low of 100,300 and a possible high of 111,300. This visitation forecast predicts levels similar to use that occurred in 1988, 1989, and 1990.

Interpretive Programs

Self-guided interpretive walking tours are a primary part of the north unit's designated trail system, while the south unit's interpretive program is informal. A printed interpretive pamphlet is provided to visitors for both the north and south units. Currently, four ranger-guided tours a day are given in the north unit Memorial Day through Labor Day, and about 125 prearranged tours are given the rest of the year. Ranger-guided tours in the north unit are also provided to visitors with disabilities on request. Present demand for ranger-led tours for visitors with disabilities has been low – approximately six per year. The visitor center museum displays artifacts and historic scenes. For the short-stay visitor, there is an interpretive point displaying conical mounds within walking distance of the visitor center.

THE PLAN

LAND USE AND MANAGEMENT

Management Zoning

The entire monument is listed in the National Register of Historic Places and, based on NPS policy, is included in a cultural zone with the primary purpose of protecting and interpreting cultural resources.

Under the plan, most of the monument (1,464 acres) is now classified in a preservation subzone (see Management Zoning maps). The management strategy will be to preserve, protect, and interpret cultural resources and their natural settings. Allowable uses include interpretive hiking and NPS administrative activities needed to protect resources, manage visitor use, and maintain monument facilities. Development will be restricted to trails, boardwalks, signs, interpretive waysides, and primitive administrative roads.

An 8-acre area, including the visitor center, parking area, surrounding landscaped area, monument housing area, and maintenance area, will be in a monument development subzone. Facilities in this area will continue to serve the needs of monument management and visitors. A 3-acre area at Sny Magill will be designated as a special river access subzone, including a 90-foot-wide corridor for the access road, boat launch, and parking area, which will allow continued day-use access for river users. The state will continue to manage the subzone under a special agreement with the Park Service.

General Management and Use Concepts

The three units in the monument, north, south, and Sny Magill, will be managed under three different concepts. The north unit will have the greatest level of visitor use, most intensive interpretive activities, and highest level of supporting development. The south unit will be managed to support some visitor use, but preserve a low-key, primitive setting. The unit will have low levels of use, and there will be minimal interpretive activities and little development. Except for the special river access subzone, Sny Magill will be managed for maximum resource preservation. Although it will not be closed to the public, visitor use in the mounds area will be minimal, with no on-site interpretive activities and no facility development. Development will be undertaken only to protect the mounds, not for visitor use.

RESOURCES MANAGEMENT

The National Park Service will continue to preserve and protect the cultural and natural resources of the monument. Although these preservation efforts will generally be compatible, conflicts may arise – for example, natural vegetation growth causing root damage to mounds, animal burrowing, and bank erosion/stabilization. In these instances, management of cultural resources will take precedence over management of natural resources, according to applicable law, regulation, and NPS policy. Mound preservation will continue to be the major and primary emphasis in resource management activities. The monument's *Resource Management Plan* (RMP) (NPS 1984) is scheduled to be updated; the following management actions will be refined and detailed through that process.

NOTE:
THE ENTIRE MONUMENT
IS IN THE CULTURAL ZONE



MANAGEMENT ZONING NORTH/SOUTH UNITS

EFFIGY MOUNDS NATIONAL MONUMENT

UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

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NOTE:
THE ENTIRE MONUMENT
IS IN THE CULTURAL ZONE

PRESERVATION
SUBZONE

MISSISSIPPI RIVER

SPECIAL RIVER
ACCESS SUBZONE

PRESERVATION
SUBZONE

Wyalusing
Slough

Sny Magill Creek

MANAGEMENT ZONING SNY MAGILL UNIT

EFFIGY MOUNDS NATIONAL MONUMENT

UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

DSC/APR 89 394/20,018



0 100 200 300 400 500 1000 Feet

Cultural Resources

Active management of mounds in the monument is accomplished in accordance with the RMP. This GMP summarizes the program as applied to mounds in the north and south units and, with some modification as discussed below, the treatment of mounds in the Sny Magill unit.

North and South Units. The primary issue is the maintenance of appropriate ground cover vegetation. In past years, trees were removed from most of the mounds in the north and south units, and trees and shrubs are suppressed on these mounds. The present practice encourages grass and forb cover on maintained and heavily visited mounds. Trees are being removed from unmaintained mounds in the north and south units, but the growth of small shrubby plants is not systematically suppressed. Most mounds in the north and south units have been rehabilitated and, although written guidelines have been prepared for dealing with recent disturbances, mound restoration is not a significant issue for these units.

Monitoring visitor impacts on heavily used mound resources will be continued to ensure that impacts are kept within acceptable limits. As specified in the RMP, on heavily visited mounds maintaining a sod cover is the primary protection against erosion and visitor wear. Special attention will be given to keeping visitors off the mounds and to discouraging shortcutting across the mounds and other activities that damage the sod cover. Actions that may be taken to reduce impacts include increased information and education, additional interpretive signs, rerouting trails, increased maintenance and enforcement activities, or whatever management activities are needed to avoid adverse impacts on the mounds.

Present guidelines recognize the potential for contamination of archeological resources through the use of herbicides and fertilizers and consequently select a more passive or natural approach to the management of mound ground cover. The existing guidelines also note, in this context, that the management of vegetation on the mounds cannot be separated from the management of the adjacent natural resources.

No broad new initiatives for cultural resources management are planned for mounds in the north and south units. Recent investigations have been directed toward the evaluation of rock-shelters as occupation or activity areas. Work is currently underway on cataloging the existing museum collections. An approved "Scope of Collections" statement will guide new collecting activities. The need to use nonmortuary data in the interpretive program has been recognized for some time. To date, most of the data needed to address nonmortuary aspects of the Effigy Mounds manifestation have been drawn from research on sites outside the monument.

Sny Magill Unit. Recent field research at Sny Magill has been directed toward the major research needs identified in the RMP. A photogrammetric contour map has been produced, which provides accurate locational data for most of the mounds in the group. Further, on-the-ground fieldwork has been directed at verification and amplification of the features documented via photogrammetry. Systematic data have been recorded on the number and condition of trees growing on the mounds. Similar data have been generated on the amount of disturbance from human activities and animal burrowing. Also, markers have been placed to measure the extent of mound erosion on the bank of Johnson's slough (a flowage channel of the Mississippi River). The National Park Service is working with other agencies to determine the cause of the shoreline erosion and identify a strategy to address this problem.

Existing RMP procedures can be adapted to adequately deal with the problems of trees and ground cover vegetation in the Sny Magill unit. Although the topographic setting is different than in the main

units, the operation of the basic ecological mechanisms are similar. The mounds will receive the sort of selective tree removal used on the unmaintained mounds in the north and south units. Because of the density of mounds in the Sny Magill unit, this will entail a more complex program that cannot be implemented in a single season.

Natural Resources

Natural resource management objectives at the monument are to preserve and protect natural ecological processes except where they would threaten the integrity of the mounds (NPS 1988). The protection and preservation of the natural environment for the enjoyment of monument visitors and for the integrity of the mounds and ecosystem are the principle considerations.

This section summarizes the natural resources issues and major natural resources management recommendations at Effigy Mounds. Additional details on these and other projects are included in the monument's RMP.

Specific natural resource management recommendations include the following actions:

- Undertake research to determine the projected climax forest succession/development and locate exotic plant species, commercially profitable plants, and rare or endangered species.

- Conduct an aquatic and wetland plant survey in and around the ponds, streams, and floodplains within the monument.

- Conduct an insect survey to determine beneficial insect species and species that may present management problems.

- Conduct research on acidity of rainfall and surface water, and develop method of determining degradation of vegetation and wildlife and use indicator plants to monitor acidity levels.

- Locate, monitor, and control garlic mustard in the monument.

- Conduct land use study of monument to record past ownership, and historic land use identify and inventory lichens and bryophytes.

- Identify, inventory, and recommend control strategy for exotic plant species.

Recreational Use. The range of recreational uses in the monument area is increasing and has an impact on the monument's resources. The new recreational use activities include off-road vehicles, all-terrain vehicles, camping, snowmobiling, cross-country skiing, and horseback riding. Access by IA 76 and local roads transecting and bordering the monument create a jurisdictional and operational problem. Year-round monitoring and research on recreational use patterns will be done to support management decisions and implementing actions.

Trail Erosion Control. Visitors shortcutting on trails is a continuing problem, particularly on switchbacks and bluff edges, and results in visual scars and erosion. Research will be done to determine the feasibility of planting ground cover to control visitor use and soil erosion. Research is being undertaken to analyze soil components and natural plant associations in determining the best method to reestablish natural, impassable ground cover along the trail system.

Forest and Vegetation Management. The management strategy has been to allow the forest to mature and fill in open areas, except on burial mounds. It has been estimated that this will occur during the next 50 years if the area is protected from fire. Research is required to determine the impacts of this policy on the forest/prairie mix.

Prairie Management. Small prairie remnants are currently maintained along some bluff edges by removing shrubby growth, which provides scenic vistas of the Mississippi Valley. Other prairie remnants are rapidly being encroached on by the forest. Currently, a research program is being implemented to determine the feasibility and desirability of maintaining prairie openings along bluff edges and level uplands. Additional recommendations are as follows:

- Manage prairie remnants in the north and south units by prescribed burns, tree removal, mowing, vegetation surveys, photographic surveys, exotic species control, and monitoring ecological response to fire.

- Manage goat prairies in north and south units.

- Restore a 39-acre prairie on an old field by reseeding.

- Conduct pollen study of sediments in and around Founders Pond area at the monument.

- Identify, inventory, and recommend control strategy for exotic plant species at the monument.

A fire management plan was developed for Effigy Mounds in 1987 and partially implemented by a prescribed burn on five sites in the spring of 1988. As a follow-up, further research is needed to evaluate the effects and benefits of the burn. Prescribed burns will be continued on a regular basis as described in the fire management plan.

Endangered Species. As discussed above, several endangered, threatened, and rare species identified by the U.S. Fish and Wildlife Service and the state have been documented as transient and/or resident in the monument, including the federally listed bald eagle (*Haliaeetus leucocephalus*) and state-listed red-shouldered hawk (*Buteo lineatus*) and river otter (*Lutra canadensis*). Sightings of other rare species of plants, fish, and birds have not been confirmed. At this time there is no immediate threat to any species or its habitat, and present conditions are reasonably stable. Research will be required to identify the subject species and potential habitat. Specific resource management recommendations include the following actions:

- Conduct habitat survey and inventory rare and endangered species of plants, animals, exotic animals, and extirpated and present native animals.

- Identify species of mollusks (land snail and clam) that inhabit the monument.

- Identify and inventory all vertebrates in the monument.

River Use. The Yellow River and its associated ponds and backwaters bisect the headquarters area of the monument. It traverses about 3/4 mile through the monument and is considered a good fishing, trapping, and canoeing river.

Impacts on the monument's resources is caused by such activities as illegal camping, shooting, and off-road parking of trailers and vehicles. Monitoring canoeing activity is required, as is research on river use.

The Park Service will conduct periodic stream monitoring to provide current water quality information and include pollen identification in sediments and benthic sampling.

Wildlife Management. The monument has a population of many small mammals and birds native to the Upper Mississippi region. There are no recognized populations of exotic or feral mammals. Wildlife populations reproduce naturally, with no interference; however, some burrowing or rooting animals (gophers, moles, skunks) have been digging into the burial mounds. Their disturbance is relatively minor and close to the surface. Research is needed to document the effect of the benign neglect reforestation policy on wildlife habitat, the presence of undesirable species, and to support management decisions regarding burrowing and digging by animals on or in the mounds.

Other natural resource management recommendations for wildlife management contained in the RMP include the following:

- Band migrating raptors on selected capture sites in the monument.

- Reintroduce peregrine falcons.

- Conduct vertebrate survey.

- Conduct fish survey of the rivers, streams, and ponds.

- Provide wildlife management plan.

VISITOR USE, INTERPRETATION, AND DEVELOPMENT

Visitor activities in the monument will continue to include visitor center interpretive functions, interpretive walks to view mounds, hiking, and river access at Sny Magill. The *Interpretive Prospectus* for Effigy Mounds (NPS 1986b) identified the following interpretive themes for the monument:

- the marks left by a well-established native civilization prior to the arrival of Europeans

- changing human use of the land during the past 2,500 years

- a native civilization's view of the mounds may represent both death and life

- the effects of seasonal changes on lifestyles of ancient people

- the value of Mississippi Valley flora and fauna resources

Following are specific visitor use, interpretation, and development proposals for the three units in the monument. Additional detail on interpretive elements is contained in the *Interpretive Prospectus* (NPS 1986b).

The proposed development is the minimum necessary for the monument and strikes a balance between resource preservation, visitor use, and interpretation. Monument resources will be protected from unacceptable impacts, and visitor use will not increase significantly due to the plan. Development projects are proposed to increase safety, provide improved access for visitors with disabilities, protect monument resources, and improve the Park Service's ability to manage the area.

North Unit

Visitor Activities/Interpretation. The visitor center will continue to be the focus for visitor use in the monument, providing information and orientation, book sales, a film, and museum displays. The interpretive hikes will continue to be the primary visitor activity, providing opportunities to view the mounds and their environment, including the vegetation, bluffs, and scenic views of the Mississippi River. Interpretive hikes will continue to include self-guided and regularly scheduled ranger-led walks in the summer.

The north unit interpretive trail system begins adjacent to the visitor center. The 2-mile Eagle Rock/Fire Point loop trail passes a variety of mound types and several scenic overlooks of the Mississippi River and bluffs. Branch trails to the north can extend the walk another 2 miles upriver to additional mounds and overlooks. Visitors take this trail not only to view the mounds, but also to enjoy the woods, birds, cliffs, and spectacular views. Interpretive wayside exhibits provide information and thought-provoking questions about the mounds and their builders. Other small signs identify types of vegetation. This is an easy trail to follow, with abundant information and interpretive signs as well as viewing opportunities. Near Eagle Rock, a wayside addressing the changing ways people have used this area over the centuries would seem appropriate. The *Interpretive Prospectus* for Effigy Mounds concludes that all other existing waysides are adequate (NPS 1986b).

Wheelchair-bound visitors may find the steep trail up to the mounds in the north unit too tiring. The grade exceeds 10 percent in the first 1/3 mile. Using a service road, a ranger will continue to guide visitors with significant physical disabilities to the mound area if time permits. Conducted hikes will continue to be available for blind and mentally impaired visitors.

A two-car parking area will be constructed near, but set back from, the Great Bear mound to accommodate wheelchair-bound visitors, so that NPS-escorted cars can access it from the maintenance road that runs parallel to the trail past the mound. From this parking area, wheelchair-bound visitors will be able to traverse an accessible trail to a proposed view platform overlooking the Great Bear mound.

For wheelchair-bound and other people with disabilities who want to view mounds without going far from the visitor center, a spur trail will be constructed to the Three Mounds group that is adjacent to the north end of the visitor center. The spur trail will begin close to the north end of the footbridge (which is between the Three Mounds group and the visitor center) and will extend about 30 feet on the south side of the Three Mounds group. The slope of this and all other trails designed for visitors with disabilities will be less than 10 percent and preferably less than 8 percent.

To provide another option, a new south unit trail beginning at the visitor center will be accessible for a few hundred yards to the linear mounds south of IA 76 via a tunnel under the highway. Additional detail on this trail is provided below.

Development/Administration. Currently, there are several switchbacks in the main trail into the north unit between the visitor center and the Fire Point trail loop. A portion of this trail (about 1,000 feet) will be rerouted to reduce the number of switchbacks. This will greatly reduce the problem of hikers shortcutting at switchbacks and causing erosion of slopes. The slope of the new trail alignment will be less than that of the old trail. Rest areas with seating will be provided at approximately 300-foot intervals. The realigned trail will provide a less tiring experience for elderly and other less physically able visitors. Maintenance needs will decline because most shortcutting will be eliminated and the need for barriers will be substantially reduced.

The north unit trail system has a number of safety barriers at locations such as cliff edges, cliff overlooks, and trail switchbacks, and there is no design consistency among these barriers in materials, form, and, consequently, aesthetics. Some overlook barriers do not adequately restrict small children from going beyond the intended stopping point. In some instances, barriers are used with marginal necessity, and there are problems with maintaining numerous safety barriers. For example, many of the metal barriers require maintenance that is more frequent and labor intensive than other options that would be as effective for safety purposes and more desirable visually.

A consistent design approach will be developed for new safety barriers that is unifying and attractive. Existing barriers will be rehabilitated or redesigned with the standard design theme but with site-specific solutions. The safety barriers will prevent visitors (especially children) from inadvertently going beyond the intended stopping points. The need for safety barriers will be critically evaluated. Additional barriers that are necessary will be constructed, and excessive barriers will be eliminated. The new safety barriers will be designed for minimal maintenance.

Trails that are aligned so closely to the base of a mound that they cut into the mound directly or cause erosion that would deteriorate the mound will be realigned to eliminate such damage.

Many visitors have expressed a desire to view an effigy mound from an elevated platform to better distinguish the animal shape a given mound represents. To accomplish this, an elevated boardwalk (up to 8 feet high) will be constructed to view the Great Bear mound. This boardwalk will occupy the same alignment as the existing trail that runs along the south and east sides of the mound, so little additional vegetation clearing will be needed. The Great Bear mound is tilted because it was built on the side of a moderate slope. This slope faces the direction of the proposed view platform boardwalk. For this reason, the boardwalk will not need to be as high as it would if the mound were built on a level surface. This type of viewing arrangement will allow several visitors to observe the mound from an elevated viewpoint at the same time from a variety of angles, and it will be accessible to wheelchair-bound visitors. The platform will be carefully designed to keep it from overpowering the resource it is proposed to help interpret. It will be designed by NPS personnel trained in minimizing the visual impacts of proposed facilities, using materials and colors that blend with the surroundings. The structure will take advantage of existing site topography, and the design will be reviewed by NPS specialists in aesthetics, environmental design, and cultural resource impacts prior to implementation.

The 60-car parking area at the visitor center is adequate to accommodate parking needs most of the year. However, during a few weekends in the fall season, demand for parking space far exceeds the amount available. During these weekends, monument staff directs overflow parking to grassed areas immediately south and southeast of the parking lot and visitor center. This practice will continue if visitor use stays within forecasted levels (i.e., no substantial increase). To maintain these grassed areas, a turf management program will be implemented. The management program will include watering the grassed parking area for several hours following weekend use. In the fall, after all parking use is finished, the grass area will be aerated. The pattern that cars are

parked and the direction they drive should be varied each day to minimize soil compaction in the grassed parking area.

There is a shortage of covered storage in the maintenance area, and acquisition of some additional maintenance equipment and materials will require additional storage space. The space will provide protection from the weather and security for the items stored. A three-bay garage will be constructed on the west end of the present maintenance area. This may require relocating the propane tanks and fill pipes in that area.

South Unit

Visitor Activities/Interpretation. The south unit, with its famous marching bears and bird effigies, should evoke different feelings from visitors than the relatively more developed and heavily used north unit. These effigies will continue to be relatively remote, requiring a minimum 5-mile round-trip hike from the visitor center via the proposed trail system through dense forests, open prairie meadows, and scenic ridgetop vistas. A strong sense of nature will overshadow any man-made evidence. There will be few directional signs, no pavement or power lines, only a narrow, primitive trail. After about 2 miles, the trail will open up to a clearing along a ridgetop. The clearing winds for several hundred yards, displaying the 10 marching bears, several birds, and other mounds. Walking from this trail into the collection of mounds will be an awesome experience. Visitors may feel like they were the first to discover this immense array of unique mounds.

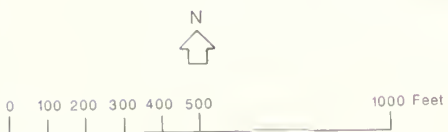
As specified in the *Interpretive Prospectus* for Effigy Mounds (NPS 1986b), near the end of the trail, when the clearing is in sight, a wayside will show a diagram of the mounds and help orient the visitor to the effigies. The sign will also remind visitors that these are ancient burial grounds that deserve certain respect and decorum; it may also raise a few questions for contemplation. This wayside will be positioned so it cannot be seen from the clearing. There will be few, if any, other interpretive signs in the south unit.

As the clearing is entered, there will be no trails to guide the visitor through the complex of mounds. The visitor will explore and wander through the clearing adjacent to the mounds. As long as preservation of the mounds is not threatened, the mounds area will be left without signs and internal trails.

Development/Administration. To improve the visitor experience, the south unit trail will be relocated, mostly separate from the administrative roads that are now used for the trail system. The trailhead will be at the visitor center, and from there the trail will pass through a new pedestrian tunnel under IA 76, cross the Yellow River via a proposed footbridge, wind up the back side of the bluff, and end at the Marching Bears mound group (as discussed above). A spur trail will also provide access to a significant mound group near the Allamakee/Clayton County line.

The new trail into the south unit will be developed so that visitors with disabilities can reach the linear mounds that are immediately south of IA 76 near the visitor center. New overlooks will also be established along the trail system on the bluffs above the river. (See Proposed Development maps for specific locations of the areas and facilities discussed.)

The relocated south unit trail will not increase visitor use significantly, and the impacts of any increased use will not be substantial. The south unit trail will increase safety and provide a higher quality visitor experience. The hiking distance to access the south unit will actually increase



PROPOSED DEVELOPMENT
SNY MAGILL UNIT
EFFIGY MOUNDS NATIONAL MONUMENT
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DSC/APR 89 394/20,015

somewhat with the new trail alignment, and placing the trailhead at monument headquarters will improve management of visitors and protection for area resources. The trail will be located and constructed to minimize development impacts on monument resources, and visitor use will be managed to keep impacts within acceptable levels. Visitor use impacts on monument resources are not anticipated to be greater than at present.

In contrast to the highly developed north unit trail, the south unit will be left relatively undeveloped. The trail will be a high-standard trail designed for visitors with disabilities up to the linear mounds, but beyond that point, a 2-foot-wide dirt trail tread is proposed. A simple one-page folder will be available to assist visitors to the south unit. A more thorough self-guiding booklet should be developed by the monument staff and made available near the trailhead.

The south unit is traversed by a dirt road that roughly parallels the south side of the Yellow River. Because of past incidences of resource vandalism and administrative difficulties associated with this road, access will be limited to landowners who need access to their property and to monument administrative uses. This access limitation will be facilitated by installing a lockable gate at the intersection of IA 76 and the Yellow River road.

Sny Magill

Visitor Activities/Interpretation. Visitor use and interpretation at Sny Magill will be oriented to river access only. Most visitor use activities are related to boating, which will continue to be limited to day use only. Due to the unit's location, isolation from the headquarters area, and the fragile nature of the mound resources, visitation of the prehistoric mounds will not be encouraged at Sny Magill. The monument provides several visitor opportunities for viewing mounds in the north and south units, so the Sny Magill unit mounds will be managed exclusively for preservation. With current levels of visitor use in the mounds area, a closure is not warranted, but monitoring for potential impacts will be continued.

Development/Administration. To provide better access to the Mississippi River for existing use levels, the Park Service will permit the Iowa DNR to enlarge the existing parking area and pave the boat ramp (see Proposed Development: Sny Magill map). The entrance road and enlarged river access parking area will remain unpaved. Any future increases in demand will be accommodated at other areas.

To ensure better preservation of the mounds, administrative protection activities will be increased. The Iowa DNR will be asked for additional cooperative assistance to protect the mounds area.

BOUNDARY ADJUSTMENTS AND LAND PROTECTION

There are no nonfederal lands within the boundaries of Effigy Mounds National Monument. A dirt road paralleling the Yellow River on the south side has been maintained by Allamakee County in the past, and it provides winter access for a landowner west of the monument. Because this road is across federal land, it will be gated to reduce resource damage and visitor management needs and provide access for NPS administrative use; continued access will be allowed only for the landowner. This proposal will require cooperation from the landowner and Allamakee County.

The monument boundary will be expanded by about 50 acres to include the narrow strip of river bottomland between the north unit and the Mississippi River (see proposed Boundary Adjustments



0 10 20 4000 Feet

PROPOSED BOUNDARY ADJUSTMENTS

NORTH/SOUTH UNITS

EFFIGY MOUNDS NATIONAL MONUMENT

UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

DSC/APR 89 394/20.012

map). This will incorporate the Red House landing and FTD prehistoric sites on state land in the river floodplain. These prehistoric sites represent an important aspect of the mound-building culture – village habitation – which is not currently included in the monument boundary. Congressional authorization will be required for a boundary adjustment. Negotiations will be initiated with the state of Iowa to transfer fee-title ownership to the federal government for inclusion in the monument. This will continue a tradition that started with the original state donation of 1,000 acres that formed the national monument in 1949.

The proposed boundary adjustment will also permit acquisition of the Soo Line right-of-way if abandoned at some time in the future. Until that time, no action will be taken to acquire the railroad property. No other private lands are in the proposed boundary addition area. Based on a preliminary review of potential monument additions in the region, it does not appear that any other sites in the vicinity of the monument are significant enough to warrant addition to the monument as a detached unit.

Other potential additions of land immediately adjacent to the monument were evaluated in the draft *General Management Plan/Environmental Assessment* (NPS 1990), but none were determined significant enough to warrant addition to the monument.

IMPLEMENTATION COSTS AND PRIORITIES

Annual operating costs for the plan are shown in table 2. Estimated development costs and priorities are shown in table 3.

TABLE 2: EFFIGY MOUNDS NATIONAL MONUMENT – ADDITIONAL OPERATING NEEDS

	Full-Time Equivalent	Grade	Amount
Visitor Protection & Resource Management	0.3	GS-4	\$5,477
	1.8	GS-5	35,568
	Supplies/materials		3,500
Maintenance	1.7	WG-3	\$35,765
	0.5	WG-4	11,400
	1.0	WG-5	21,800
	0.4	WG-6	9,990
	Supplies/materials & utilities		6,500
Interpretation	1.0	GS-4	\$15,700
	0.5	GS-5	9,880
	Supplies/materials		4,500
Administration & Management	0.4	GS-3	\$5,000
	Supplies/materials		<u>1,200</u>
TOTAL	7.6		\$166,280

Note: Salaries are calculated at 26% for FERS, 12.75% for CSRS, and 7.55% for seasonal employees.

TABLE 3: EFFIGY MOUNDS NATIONAL MONUMENT – PROPOSAL, ALTERNATIVES, AND COST ESTIMATES

<u>Issue (Priority)</u>	<u>Plan</u>
North Unit	
Peak use parking (3)	No action
Trails (2)	Reroute Fire Point trail at switchbacks; evaluate need for safety barriers at overlooks and other areas and develop consistent design solutions; develop view platform at Great Bear mound \$409,000
Access to mounds (2)	Provide escorted trips to and parking for visitors with disabilities at Great Bear mound; improve spur trail at Three Bear mound group; make trail into south unit accessible to linear mounds south of IA 76 \$9,000
Maintenance/storage (2)	Develop three-bay garage on west end of maintenance area \$202,000
South Unit	
Visitor use/development (1)	Develop new trail from visitor center into south unit with tunnel under IA 76 and footbridge over Yellow River; establish overlooks \$322,000
Yellow River road (1)	Gate and limit access to landowners and administrative uses \$1,000
Sny Magill	
Interpretive use/development of mounds area (3)	No action
Visitor contact (3)	No action
Mississippi River access (2)	Expand parking area (gravel); pave ramp funded by state
Total Development Costs	\$943,000
Boundary Adjustments (2)	Add riverfront between north boundary and the Yellow River; acquire in fee when available

CONSULTATION/LEGAL COMPLIANCE

The National Park Service consulted with the following agencies during the preparation of this document:

Advisory Council on Historic Preservation
Iowa Department of Natural Resources
Iowa State Historic Preservation Office
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service

Informal section 7 (threatened and endangered species) consultation was initiated by the Park Service and received from the U.S. Fish and Wildlife Service (Rock Island Field Office, Illinois) in June 1988. Also, a memorandum regarding threatened and endangered species at Effigy Mounds National Monument was received from the Iowa Department of Natural Resources (August 1988). Updated Iowa Department of Natural Resources threatened and endangered species information was obtained (August 1989), including the red-shouldered hawk report (Stravers 1989).

The draft *General Management Plan/Environmental Assessment* (GMP/EA) was sent to selected agencies, interested organizations, and individuals for review and comments in June 1990. A finding of no significant impact was approved on May 3, 1991 (see appendix A). The finding summarizes comments received on the draft GMP/EA and the NPS response.

The state historic preservation officer was involved in the preparation of the plan. The draft GMP/EA was sent to the Advisory Council on Historic Preservation and the State Historic Preservation Office, and no comments were received. Archeological surveys of proposed trail alignments will be done after the preliminary trail location is completed but prior to development.

Because federally protected wildlife species are occasionally observed in the monument area, the draft plan was sent to the U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act. On December 20, 1990, the Fish and Wildlife Service concurred in the Park Service determination that the proposed action will not likely jeopardize the continued existence of any federally listed or proposed species. Field surveys of proposed trail alignments for possible candidate plant species will be done after preliminary trail location but prior to development.

APPENDIX A: FINDING OF NO SIGNIFICANT IMPACT

FINDING OF NO SIGNIFICANT IMPACT AND RECORD OF PLAN APPROVAL for the *General Management Plan*

Effigy Mounds National Monument

Introduction

On July 30, 1990, the National Park Service (NPS) issued a draft *General Management Plan/Environmental Assessment* (GMP/EA) for public review. The document described a proposal and three alternatives, and it analyzed their environmental consequences. Major issues addressed in the document include visitor use and development for the south unit near monument headquarters and the Sny Magill unit about 11 miles south, and protection of significant cultural resources adjacent to the monument boundaries.

The final plan proposes a new alignment for the south unit trail to increase safety and improve the experience for visitors hiking to the Marching Bears mound group. The trailhead will be at the existing visitor center parking. The south unit trail relocation will include a pedestrian tunnel under Iowa 76 and a footbridge over the Yellow River. The Sny Magill mounds group will be preserved in its current undeveloped status with minimal visitor use. However, a state project to expand the gravel fishing access parking area and pave the existing boat ramp at Sny Magill will be permitted by the National Park Service. The plan also proposes that state and railroad lands between the monument's north unit and the Mississippi River be added to the monument boundary so that the river bottom area, which includes prehistoric village sites, may eventually be acquired. The railroad right-of-way will only be acquired if the line is abandoned, and the state land will only be acquired if donated by the state of Iowa.

Public Review

The public review period, originally scheduled to end on September 15, was extended until October 15 at the request of local groups, who desired more time to review the GMP/EA. Eight comment letters were received during the public review period, three from government agencies, two from organizations, and three from individuals.

The McGregor District Manager for the Upper Mississippi River National Wildlife and Fish Refuge said that they did not oppose the ramp and parking improvement at the Sny Magill unit, but they were concerned that the facility not continually be expanded to respond to increasing demand in the future. The plan was revised to state that while the proposed improvements are authorized, future increases in demand will need to be accommodated at other areas.

The Iowa Attorney General opposed several improvements to the monument, including alignment changes and the proposed view platform along the Fire Point trail in the north unit and the proposed hiking trail into the south unit, claiming that the aesthetic and financial costs will outweigh the benefits. The Park Service believes that these improvements are not excessively expensive, and they will be designed to minimize impacts on aesthetics in the area. The view platform will be designed by NPS personnel trained in minimizing the visual impacts of proposed monument facilities, using materials and colors that blend with the surroundings. The structure will take advantage of existing site topography, and the design will be reviewed by NPS specialists in aesthetics, environmental design, and cultural

resource impacts prior to implementation. While the pedestrian tunnel under Highway 76 and the footbridge over the Yellow river will be relatively expensive, they are necessary to increase safety for visitors entering the south unit, and they are desirable to improve the experience for visitors hiking into the area. The proposed trail alignment will relocate the existing trailhead access from a dangerous railroad and highway crossing near the Mississippi River, and as such, it is not a completely new trail, but rather a relocated trail.

The Allamakee County Tourism & Economic Development Commission supported the low-key development for the south unit. They had some questions about preservation and interpretation for the historic military road. These issues will be addressed through updates to monument resource management and interpretation plans. The commission made several recommendations for additional federal land acquisition, including several tracts identified under alternative B. The Park Service believes that these properties are not essential to preserving and interpreting monument resources, they are not likely to be under severe development pressure in the next 10 years, and they can be preserved through other means.

The National Parks and Conservation Association felt that a greater emphasis should be placed on resource preservation and less on visitor use, especially in the south unit where they opposed the proposed trail development. The Park Service believes that the planned level of development is appropriate for the monument. The proposed south unit trail relocation will not increase visitor use significantly, and the impacts of any increased use will not be substantial. The realigned south unit trail will increase safety and provide a higher quality visitor experience for those entering the area. The hiking distance to access the south unit will actually increase somewhat with the new trail alignment, and placing the trailhead at monument headquarters will improve management of visitors and protection for area resources. The trail will be located and constructed to minimize development impacts on monument resources, and visitor use will be managed to keep impacts within acceptable levels.

Visitor use impacts on monument resources are not anticipated to be greater than at present, and in some cases, such as the realigned Fire Point trail, vegetation damage and soil erosion impacts will be reduced. Visitor use patterns and their impacts on natural and cultural resources will be monitored before, during, and after implementation of the plan. Changes in use levels, if any, will be evaluated to determine if detrimental effects are occurring on monument resources, and corrective actions will be taken as needed. The plan was revised to include additional discussion, as described in this finding, on the need for proposed development.

The Upper Iowa Audubon Society submitted a letter that questioned most of the visitor use and development proposals for the monument. The Park Service believes that the proposed development is appropriate for the monument and strikes a balance between resource preservation, visitor use, and interpretation. Monument resources will be protected from unacceptable impacts, and visitor use will not increase significantly due to the plan. Development projects are proposed to increase safety, provide improved access for visitors with disabilities, protect monument resources, and improve the Park Service's ability to manage the area. As stated above, the plan was revised to include additional discussion on the need for the proposed actions.

The Audubon Society also supported additional land acquisition, including several tracts identified in alternative B. As stated above, the Park Service believes that additional land acquisition (beyond that described in the proposal) is not necessary or appropriate for the monument. The society also recommended increased education and interpretive opportunities for the surrounding communities. This will be addressed through interpretive planning and annual operations programming for the monument. The society made detailed suggestions for managing vegetation in the monument. These will be addressed in the monument's scheduled revision to the *Resource Management Plan* and annual management activities to implement resource management objectives.

Comments from the three individuals questioned the monument's vegetation and fire management practices, opposed the proposed levels of development, advocated additional land acquisition for the monument, and supported increased education and interpretation efforts in the surrounding communities. These comments were similar to those received from the agencies and organizations discussed above, and they will be addressed as noted above by providing additional rationale in the plan for proposed development, and during revisions to interpretive plans, annual operating procedures, and the monument's *Resource Management Plan*, which is scheduled for revision this year.

The entire monument is listed on the National Register of Historic Places. The State Historic Preservation Office was involved in the preparation of the plan. The GMP/EA was sent to the Advisory Council on Historic Preservation and the State Historic Preservation Office, and no comments were received.

Because federally protected wildlife species are occasionally observed in the monument area, the GMP/EA was sent to the U.S Fish and Wildlife Service under Section 7 of the Endangered Species Act. On December 20, 1990, the Fish and Wildlife Service concurred in the Park Service determination that the proposed action will not likely jeopardize the continued existence of any federally listed or proposed species.

Summary of Impacts

Under the GMP, cultural resources throughout the monument will be protected. Archeological resources will not be affected in the Sny Magill unit, but slight disturbance from visitor activities will continue to occur in the south and north units. There will be no impacts to historic resources. Access to sites within the boundary addition will not be increased, and sites will receive additional protection under NPS management.

Development and improvement of facilities will affect soils temporarily. The proposed trail relocations in the north and south units will affect about 0.9 acre. The short trail and small parking area at Great Bear mound for visitors with disabilities will affect 0.06 acre, and the maintenance and storage area will affect about 0.03 acre of land.

In areas of construction, vegetation will be destroyed and runoff could encourage exotic species such as thistle and bindweed. Replanted vegetation will differ from vegetation in adjacent areas. Parking at Sny Magill will affect 0.4 acre of mixed grass/weed cover. Development of the relocated interpretive/hiking trail in the south unit will affect 0.75 acre of shrubs and trees. A new trail alignment in the north unit will disturb 0.1 acre of vegetation. Access improvements in the north unit for visitors with disabilities will affect about 0.04 acre of vegetation. The maintenance and storage area will affect 0.03 acre of turf grass.

Temporary displacement of wildlife will occur during facility construction, but effects will be minimal. Some improvement to wildlife habitat will occur because of reduced access on the Yellow River road. Protected wildlife species (bald eagle, peregrine falcon, and red-shouldered hawk) will not be affected. There will be no impacts on known protected plant species. A survey of the alignment for the trail into the south unit for rare plants will be conducted prior to development. NPS development and visitor use will not substantially affect floodplains or wetlands. No noticeable impacts will occur on air or water quality.

Minor short-term inconveniences to visitors will occur during development of facilities; however, most visitor activities will not be affected during construction and, in the long-term, the visitor experience will be improved as actions are implemented.

Finding

The proposals, individually or cumulatively, do not constitute actions which normally require preparation of an environmental impact statement (40 CFR 1502.3; 516 DM 6, appendix 7.3). The action is not a categorical exclusion under 40 CFR 1501.4 and 1508.4.

The proposals will not have a significant effect on the human environment (40 CFR 1508.27b). Negative environmental impacts that could occur are minor and temporary in effect. There are no significant adverse impacts on public health, public safety, rare and endangered species, or other unique characteristics of the area. No highly uncertain or controversial impacts, unique or substantial unknown risks, major cumulative effects, or elements of precedence were identified. Implementation of actions will not violate any federal, state, or local law.

Based on the foregoing, the National Park Service has determined that implementation of the plan will not constitute a major federal action significantly affecting the quality of the human environment. Therefore, an environmental impact statement is not required and the plan is hereby approved.

Approved:

William W. Schenk
Acting Regional Director, Midwest Region
National Park Service

May 3, 1991

APPENDIX B: LEGISLATION

A PROCLAMATION - No. 2860 - October 25, 1949

Establishing the Effigy Mounds National Monument -- Iowa

WHEREAS the earth mounds in the northeastern part of the State of Iowa known as the Effigy Mounds are of great scientific interest because of the variety of their forms, which include animal effigy, bird effigy, conical, and linear types, illustrative of a significant phase of the mound building culture of the prehistoric American Indians; and

WHEREAS the Advisory Board on National Parks, Historic Sites, Buildings, and Monuments at its meeting held October 28-30, 1941 declared the Effigy Mounds to be of national scientific importance; and

WHEREAS the State of Iowa has acquired title to 1,204.39 acres of land containing these unusual objects, and has conveyed 1,000 acres thereof to the United States as a donation for national-monument purposes, such conveyance having been accepted on behalf of the United States by the Acting Director of the National Park Service on August 31, 1949; and

WHEREAS it is contemplated that the State of Iowa will convey the remaining 204.39 acres of such land to the United States for national-monument purposes in the near future; and

WHEREAS it appears that it would be in the public interest to set aside and reserve the said land as a national monument as hereinafter indicated:

NOW, THEREFORE, I, HARRY S. TRUMAN, President of the United States of America, under and by virtue of the authority vested in me by section 2 of the act of June 8, 1906, 34 Stat. 225 (16 U.S.C. 431), do proclaim that, subject to all valid existing rights, the lands within the following-described boundaries and shown on the diagram hereto attached and forming a part hereof which belong to the United States are hereby reserved and established as a national monument, to be known as the Effigy Mounds National Monument; and that the lands within such boundaries which do not now belong to the United States shall become a part of such monument upon the acquisition of title thereto by the United States:

FIFTH PRINCIPAL MERIDIAN

T. 96 N., R. 3 W., Allamakee County

T. 95 N., R. 3 W., Clayton County

Beginning at the point where the West line of the Right-of-Way of the Chicago, Milwaukee, and St. Paul Railroad intersects the North line of Sec. 27 of said T. 96 N.:

Thence southerly along said West line of the Railroad Right-of-Way through said Sec. 27 and part of Sec. 34 of said T. 96 N. to the North line of the Right-of-Way of Iowa Primary Highway No. 13 in Government Lot 3 of said Sec. 34;

Thence westerly along said North line of the Highway Right-of-Way through said Sec. 34 to the West line thereof;

Thence northerly along said Section line to the Southeast corner of the North Half of the Northeast Quarter of the Northeast Quarter ($1\frac{1}{2}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$) of Sec. 33 of said T. 96 N.;

EFFIGY MOUNDS NATIONAL MONUMENT

Thence westerly along the South line of said North Half of the Northeast Quarter of the Northeast Quarter ($N\frac{1}{2} NE\frac{1}{4} NE\frac{1}{4}$) to said North line of the Highway Right-of-way;

Thence northerly along said North line of the Highway Right-of-Way to the North line of said Sec. 33;

Thence easterly along said Section line to the Southwest corner of said Sec. 27;

Thence northerly along the West line of said Sec. 27, N. $0^{\circ}07'$ E., 594.27 ft;

Thence N. $68^{\circ}54'$ E. 18528 ft;

Thence N. $58^{\circ}08'$ E. 135.01 ft.;

Thence S. $71^{\circ}11'$ E. 77.79 ft;

Thence N. $62^{\circ}15'$ E. 218.66 ft.;

Thence N. $57^{\circ}14'$ E. 163.48 ft.;

Thence N. $62^{\circ}34'$ E., 430.06 ft.;

Thence N. $50^{\circ}06'$ E., 142.63 ft.;

Thence N. $24^{\circ}30'$ E., 319.20 ft. to a point on the East line of the West Half of the Southwest Quarter ($W\frac{1}{2} SW\frac{1}{4}$) of said Sec. 27 and N. $0^{\circ}16\frac{1}{2}'$ W., 1477.65 ft. from the Southeast corner of said West Half of the Southwest Quarter ($W\frac{1}{2} SW\frac{1}{4}$);

Thence along said East line N. $0^{\circ}16\frac{1}{2}'$ W., 947.40 ft.;

Thence N. $82^{\circ}43\frac{1}{2}'$ E., 367.08 ft;

Thence N. $0^{\circ}16\frac{1}{2}'$ W., 445.00 ft.;

Thence S. $89^{\circ}43\frac{1}{2}'$ W., 367.08 ft. to a point on the West line of the Southeast Quarter of the Northwest Quarter ($SE\frac{1}{4} NW\frac{1}{4}$) of said Sec. 27;

Thence northerly along the West line of the Southeast Quarter of the Northwest Quarter ($SE\frac{1}{4} NW\frac{1}{4}$) and Government Lot 1 of said Sec. 27 to the North line of Sec. 27;

Thence easterly along the North line of Sec. 27 to the point of beginning.

Also, beginning at a point where the South line of the North Half ($N\frac{1}{2}$) of Government Lot 1 of Sec. 10 in said T. 95 N. intersects the West line of the Right-of-Way of Iowa Primary Highway No. 13;

Thence westerly along said South line of the North Half ($N\frac{1}{2}$) of Government Lot 1 to the West line thereof;

Thence northerly along said West line of Government Lot 1 to a point S. $0^{\circ}39\frac{1}{2}'$ E., 50 ft. from the Northwest corner thereof;

Thence along a straight line to a point on the North line of said Sec. 10 and N. $86^{\circ}18\frac{1}{2}'$ W., 150 ft. from said Northwest corner of Government Lot 1;

Thence westerly along the said North line of Sec. 10 to the Northwest corner thereof;

Thence northerly along the West line of Sec. 3 of said T. 95 N., to the Northwest corner thereof;

Thence westerly along the South line of Sec. 33 of said T. 96 N., to the Southwest corner of the East Half of the Southeast quarter ($E\frac{1}{2} SE\frac{1}{4}$) thereof;

Thence northerly along the West line of said East Half of the Southeast quarter ($E\frac{1}{2} SE\frac{1}{4}$) to the Southeast corner of the Northwest Quarter of the Southeast Quarter ($NW\frac{1}{4} SE\frac{1}{4}$) of said Sec. 33;

Thence westerly along the South line of said Northwest Quarter of the Southeast Quarter ($1\frac{1}{2}$ SE $\frac{1}{4}$) to the Southwest corner thereof;

Thence northerly along the West line of said Northwest Quarter of the Southeast Quarter ($1\frac{1}{2}$ SE $\frac{1}{4}$) to the center of said Sec. 33;

Thence easterly along the Quarter ($\frac{1}{4}$) line of said Sec. 33 to the East Quarter ($\frac{1}{4}$) corner thereof;

Thence northerly along the West line of said Sec. 34 to the South line of the said Highway Right-of-Way;

Thence easterly and southerly along the South and West line of said Highway Right-of-Way through said Secs. 34, 3, and the North Half ($1\frac{1}{2}$) of Government Lot 1 of Sec. 10 to the point of beginning.

The small area in Lot 3, Sec. 34 T. 96 N., R. 3 W., lying south of the midline of Yellow River and between the Chicago, Milwaukee, and St. Paul Railroad Right-of-Way line and the east Right-of-Way line of the Iowa Primary Highway No. 13 is not intended to be included in this description.

The area as described contains in the aggregate 1,204.39 acres, more or less.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument, and not to locate or settle upon any of the lands thereof.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, protection, management, and control of this monument as provided in the act of Congress entitled "An act to establish a National Park Service, and for other purposes," approved August 25, 1916, 39 Stat. 535 (16 U.S.C.1-3), and acts supplementary thereto or amendatory thereof.

IN WITNESS WHEREOF I have hereunto set my hand and caused the seal of the United States to be affixed.

DONE at the City of Washington this 25th day of October in the year of our Lord nineteen hundred and forty-nine, and of the Independence of the United States of America the one hundred and seventy-fourth.

HARRY S TRUMAN

By the President:
Dean Acheson
Secretary of State

Public Law 87-44

May 27, 1961
[H. R. 5571]

AN ACT

To provide for the addition or additions of certain lands to the Effigy Mounds National Monument in the State of Iowa, and for other purposes.

Effigy Mounds
National Monu-
ment, Iowa.
Lands.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, for the purposes of preserving certain important prehistoric Indian mounds and protecting existing wildlife and other natural values, the following described lands, consisting of approximately 272 acres, are hereby added to the Effigy Mounds National Monument in the State of Iowa:

TRACT A

Township 94 north, range 3 west, fifth principal meridian, Clayton County, Iowa: the portion of the southeast quarter southeast quarter of section 22 that lies between the easterly right-of-way line of the Chicago, Milwaukee, Saint Paul, and Pacific Railroad and the section line common to sections 22 and 23; those portions of lot 1 (except the northerly 900 feet thereof), lot 2, and lot 3 that lie easterly of the easterly right-of-way line of said railroad, the unnumbered lot adjacent to lot 3; and the former meandered river channel between said lot 3 and said unnumbered lot, all in section 23; containing in all 138 acres more or less.

TRACT B

Township 96 north, range 3 west, fifth principal meridian, Allamakee County, Iowa: Southwest quarter southeast quarter of section 33, containing 40 acres more or less.

TRACT C

Township 96 north, range 3 west, fifth principal meridian, Allamakee County, Iowa: South half northeast quarter and south half northeast quarter northeast quarter of section 33, excepting the right-of-way of Iowa State Highway Numbered 13; containing 93.7 acres more or less.

SEC. 2. The lands under the administrative control and jurisdiction of the United States Fish and Wildlife Service within tract A are included in the monument subject to such terms and conditions as the Secretary of the Interior may deem necessary and desirable in order to facilitate and control public access to the adjacent lands of the Upper Mississippi River Wild Life and Fish Refuge, and subject to the authority of the Secretary of the Interior to return them to the jurisdiction of the United States Fish and Wildlife Service when they are no longer required for purposes of the monument. The lands under the administrative control and jurisdiction of the Corps of Engineers, United States Army, within tract A are included in the monument subject to the right of the Corps of Engineers to retain adequate flowage and navigation rights thereon to facilitate the operation and maintenance of lock and dam numbered 10, Upper Mississippi River, or the construction, operation, and maintenance of any dam affecting this location.

SEC. 3. The Secretary of the Interior is hereby authorized to acquire the lands designated tract C by purchase or through donations.

SEC. 4. All laws, rules, and regulations applicable to such national monument shall be applicable with respect to the lands described in the first section of this Act upon the addition of such land to such national monument.

SEC. 5. There is hereby authorized the sum of not to exceed \$2,000 for the purpose of acquiring lands, interests in lands, and improvements thereon as may be necessary for carrying out this Act.

Approved May 27, 1961.

Applicability.

Appropriation.

SELECTED REFERENCES

BLEWETT, THOMAS J.

- 1986 *A Vegetation Survey of Grasslands and Rare Plants of Effigy Mounds National Monument*. Biology Department, Clarke College, DuBuque, IA.

HOWELL, EVELYN A.

- 1984 *A Vegetation Survey of Effigy Mounds National Monument*. Department of Landscape Architecture, University of Wisconsin, Madison, WI.

IOWA DEPARTMENT OF NATURAL RESOURCES

- 1988 *Iowa State Comprehensive Outdoor Recreation Plan*. Des Moines, IA.
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NATIONAL PARK SERVICE, U.S. DEPARTMENT OF INTERIOR

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