National Park Service • U.S. Department of the Interior

Effigy Mounds National Monument

Iowa

Final General Management Plan/ Environmental Impact Statement

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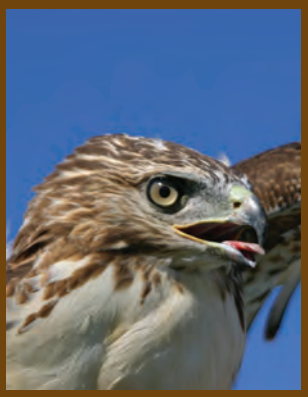


Final General Management Plan / Environmental Impact Statement
Effigy Mounds National Monument
Clayton County and Allamakee County, Iowa

Effigy Mounds National Monument was established by Presidential Proclamation 2860 on October 25, 1949, to protect significant prehistoric earthen mounds found in northeast Iowa. Subsequent legislation expanded the purpose and significance by specifying the wildlife, scenic, and other natural values of the area. The mounds are in a variety of forms, including effigy (animal-shaped), linear, conical, and compound (a combination of conical and linear elements). The monument contains about 200 mound sites, of which 31 are in the form of bear and bird effigies. The monument's authorized boundary was expanded in 1961 and again in 2000; it now encompasses a total of 2,526 acres in the North, South, and Sny Magill units, and the Heritage Addition.

The national monument's last general management plan was completed in 1990 with an amendment completed in 1999. Since 1999, the 1,045-acre Heritage Addition was added to the national monument thereby increasing the land base by approximately 70%. The national monument faces new resource and management challenges as a result of this and other changes. This *Final General Management Plan / Environmental Impact Statement* will provide the direction for these new lands.

During the development of the general management plan, the National Park Service took a close look at past construction activities and practices in the park, particularly those with the potential to harm the archeological resources the park was created to protect. To ensure the protection of the resources, the National Park Service has spent a significant amount of time in the past three years reassessing the proper role, function, and form of development in a landscape dominated by the mounds. As a result, the National Park Service revised the draft general management plan and released it for public comment in fall 2011.

This *Final General Management Plan / Environmental Impact Statement* presents and analyzes three alternative future directions for the management and use of Effigy Mounds National Monument. Alternative A is the no-action alternative, which describes current management of the monument. It serves as a basis for comparison in evaluating the other alternatives. Alternative B is the National Park Service preferred alternative and is also the environmentally preferable alternative. In alternative B, a large portion of the monument would be zoned as backcountry and a virtual research center would be created to collect and share information on mound research and preservation. In alternative C, more of the monument would be placed in a "discovery zone" that would allow for more visitor amenities, while a research center would be developed outside of the monument. Alternatives B and C would improve access to the South Unit by connecting the Yellow River bridge and trail to the trails in the South Unit.

The potential environmental impacts of all alternatives have been identified and assessed. The key impacts of implementing alternative A, the no-action alternative, would be no new impacts on soils, vegetation, wildlife, and visual resources. There would be no impacts to special status species as a result of this alternative. There would be negligible to moderate, adverse impacts to some cultural resources (including museum collections), but these impacts would be confined to localized areas and would often be offset by beneficial impacts. The mounds would not be adversely affected by any of the alternatives.

The impacts of implementing alternative B, would be beneficial for visitor experience and museum collections, and would result in short-term, minor, adverse impacts and long-term, negligible, adverse impacts on soils, vegetation, wildlife, and visual resources from building and trail construction. There would be negligible to moderate, adverse impacts to some cultural resources, but these impacts would be confined to localized areas and would often be offset by beneficial impacts. Special status species would not likely be adversely affected. The key impacts of implementing alternative C would be similar to those of implementing alternative B. Special status species would not likely be adversely affected.

SUMMARY

Effigy Mounds National Monument was established by presidential proclamation on October 25, 1949, to protect significant prehistoric earthen mounds found in northeast Iowa. Subsequent legislation expanded the purpose and significance to include the wildlife, scenic, and other natural values of the area. The monument's authorized boundary was expanded in 1961 and again in 2000; the monument now encompasses a total of 2,526 acres in the North Unit, South Unit, Sny Magill Unit, and the Heritage Addition.

Since the completion of the 1990 general management plan and the 1999 amendment, several conditions have changed or emerged that prompt the need for a new plan:

- The 1,045-acre Heritage Addition expanded the monument's land base by approximately 70% and added several cultural resources, including mounds and extensive natural areas.
- Management of resources and visitor needs at the Sny Magill Unit are not adequately addressed in the previous general management plan.

This document is the *Final General Management Plan / Environmental Impact Statement* (GMP) for Effigy Mounds National Monument. During the development of this general management plan, the National Park Service (NPS) took a close look at past construction activities and practices in the park, particularly those with the potential to harm the archeological resources the park was created to protect. To ensure the protection of the resources, the National Park Service has spent a significant amount of time reassessing the proper role, function, and form of development in a landscape dominated by the mounds. As a result, there have been some fairly significant changes to the alternatives that reduce the amount of development in the alternatives. As a result of the changes to the alternatives, a *Revised Draft General Management Plan / Environmental Impact Statement* was released for public review in August 2011.

This *Final General Management Plan / Environmental Impact Statement* presents three alternatives for future management of Effigy Mounds National Monument.

ALTERNATIVE A—NO ACTION

Current management strategies and trends would continue under the no-action alternative. There would be no major changes to monument operations or visitor services. All cultural sites would continue to be maintained and preserved using current practices. The mounds would continue to be protected and preserved. Management treatments would vary according to the cover and condition of individual mounds.

Historic sites would be protected from degradation but not otherwise managed. The museum collections and archives would continue to be stored in the visitor center basement, which does not meet NPS museum collections standards.

The Heritage Addition would not have a long-term plan in place. The North, South, and Sny Magill units would continue to be managed as they are currently.

Key Impacts of Implementing Alternative A

There would be no new impacts of implementing alternative A to soils, vegetation, wildlife, and visual resources. There would be negligible to moderate,

long-term, adverse impacts as well as long-term, beneficial impacts to cultural resources. Moderate, adverse impacts would be confined to localized areas. The mounds would not be adversely affected.

ALTERNATIVE B—NPS PREFERRED ALTERNATIVE

Alternative B would provide enhanced natural and cultural resource protection, opportunities for increased understanding of the monument, and expanded opportunities for visitors to experience relative quiet and solitude. Due to the sensitivity and irreplaceable nature of the mounds and cultural landscape, the National Park Service will accomplish these goals with the minimum amount of development.

The landscape and visitor facilities would support a contemplative atmosphere with opportunities for visitors to spend time reflecting on the lives and legacy of the moundbuilders[1] and the sacred nature of the site today. Education and interpretation of the natural resources of the park would be expanded.

The natural setting created by preserving or restoring landscapes would provide a connection between the moundbuilding cultures and the environment that shaped their lives and beliefs. This would be especially enhanced through the extensive backcountry zone under this alternative. Visitor experiences throughout the monument would be primarily self-guided on a variety of trail types in a quiet, contemplative setting to maintain an atmosphere of respect toward the sacred nature of the monument.

Under this alternative, the diversity of visitor trail experiences would be expanded from that currently offered at the monument.

Consistent with the resource conditions and visitor experiences defined in the backcountry zone, visitors to some areas of the monument would be able to experience a walk on marked trails through natural, undeveloped landscapes and view some mounds in a more natural state (with only some woody materials removed for preservation purposes).

Providing access to mounds that are in different conditions would allow an expansion of existing interpretive opportunities and an increased understanding of the monument's fundamental resources. A trail connecting the Yellow River Bridge and North Unit trails to the South Unit trails would be developed in consultation with the Iowa state historic preservation officer, Office of the State Archaeologist, and traditionally associated American Indian tribes.[2]

Those portions of the monument's museum collections and archives that are in long-term storage and not on display in the visitor center are inaccessible to the public, including researchers; these would either be (1) moved out of the basement of the visitor center to a more secure location outside of the monument where they will receive better care while remaining accessible to legitimate researchers; or (2) the current facility would be improved and staffing

1. As used in this document, the term *moundbuilder* is intended to broadly apply to the prehistoric American Indian groups who constructed mounds for burial and ceremonial purposes in the Upper Mississippi River Valley. Moundbuilding activities spanned approximately 1,800 years beginning around 500 BC during the Late Archaic Period, and continued through the subsequent Woodland Period to AD 1250. Effigy mounds are associated with Late Woodland Period moundbuilders. Used in this broad context, the moundbuilders are not necessarily a distinct cultural group or do not represent continuous occupation of the area by a particular ancestral people.

2. In this document, consulting American Indian tribes are referred to as *traditionally associated* due to their traditional association with the lands now recognized as Effigy Mounds National Monument. This term is not to be confused with *culturally affiliated*, as defined by the Native American Graves Repatriation Act.

would be increased to more closely meet NPS museum collections standards.

Zoning

In this alternative, the majority of the monument would be in the backcountry zone. The area around the visitor center would be zoned as development and the most heavily visited trails and mound groups would be located in the discovery zone.

While the Riverfront Tract is in the monument's authorized boundary, it is not currently owned by the National Park Service. If this tract were acquired, it would be managed in the backcountry zone.

Key Impacts of Implementing Alternative B

The key impacts of implementing alternative B, would be short-term, minor, adverse impacts and long-term, negligible, adverse impacts on soils, vegetation, wildlife, and visual resources from building and trail construction. Effects would be beneficial for museum collections because they would be stored in a location that fully meets or more closely meets NPS museum collections standards.

Alternative B also would result in negligible to moderate, adverse impacts to other cultural resources, but these would be confined to localized areas and would often be offset by beneficial impacts. The mounds would not be adversely affected. Special status species would most likely not be adversely affected. There would be minor, long-term, beneficial impacts on the visitor experience and the socioeconomic environment.

ALTERNATIVE C

Alternative C would provide enhanced and expanded opportunities for visitors to experience the monument and increase their understanding of the moundbuilders while protecting and preserving natural and cultural resources. A major component of this alternative would be the establishment of a mound research center in leased space near the monument to collect and share scholarly information, maintenance methods, and preservation techniques. Those portions of the monument's museum collections and archives that are in long-term storage and not on display in the visitor center are inaccessible to the public, including researchers; therefore, they would be moved out of the basement of the visitor center to a more secure location within the research center. The collections would remain accessible to legitimate researchers.

As a means of enhancing the visitor experience, public access to various units of the monument would be improved in this alternative. More of the monument would be in the discovery zone, allowing for more visitor amenities.

The landscape and visitor facilities would provide opportunities for the public to learn about the lives and legacy of the moundbuilders and the sacred nature of the site today. The natural setting created by preserving or restoring landscapes would provide a connection between the mound-building cultures and the environment that shaped the moundbuilders lives and beliefs.

Visitor experiences throughout the monument would be on developed trails that would allow visitors to learn about the mounds and their makers. Because more of the monument would be in the discovery zone in this alternative, visitors would be likely to encounter other visitors or park staff during their visit.

Key Impacts of Implementing Alternative C

The key impacts of implementing alternative C would be the same as the impacts of implementing alternative B.

Zoning

In this alternative, most of the North and South units would be placed in the discovery zone, which allows for more visitor amenities (developed trails, benches, etc.). The Heritage Addition would be zoned backcountry, which allows for less developed public trails to provide some access to this area and to other areas of the monument while protecting cultural and natural resources. The area around the visitor center would be zoned as development.

While the Riverfront Tract is in the monument's authorized boundary, it is not currently owned by the National Park Service. If this tract were acquired, it would be managed in the backcountry zone.

CONTENTS

CHAPTER 1: BACKGROUND

A GUIDE TO THIS DOCUMENT 3

INTRODUCTION 4
- Purpose of the Plan 4
- Need for the Plan 5
- The Next Steps 5
- Implementation of the Plan 5

DESCRIPTION OF THE MONUMENT 6
- Climate 6
- Geography 6
- Monument Units 7

FOUNDATION FOR PLANNING AND MANAGEMENT 10
- Monument Purpose and Significance 10
- Primary Interpretive Themes 12
- Special Mandates or Administrative Commitments 13
- Servicewide Laws and Policies 13
- Relationship of Other Planning Efforts to this General Management Plan 19

PLANNING ISSUES AND CONCERNS 21
- Introduction 21
- Issues 21

IMPACT TOPICS DISCUSSED IN DETAIL 23
- Cultural Resources 23
- Natural Resources 24
- Other Topics 25

IMPACT TOPICS DISMISSED FROM FURTHER CONSIDERATION 27
- Historic Buildings and Structures 27
- Air Quality 27
- Water Quality and Quantity 27
- Wetlands and Floodplains 28
- Geology 28
- Wilderness 29
- Night Sky 29
- Soundscapes 29
- Prime or Unique Farmlands 30
- Urban Quality and Design of the Built Environment 30
- Indian Trust Lands 30
- Environmental Justice 30

CHAPTER 2: ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

INTRODUCTION 35

USER CAPACITY 36
- Overview 36
- Resource and Visitor Experience Indicators and Standards 38
- Long-term Monitoring 40

PROPOSED CHANGES TO LEGISLATED BOUNDARY (NON-NPS LAND) 43
- Recommended Boundary Adjustments 43

Boundary Adjustments Considered but not Included in Recommendations 46

DEVELOPMENT OF THE ALTERNATIVES 49

MANAGEMENT ZONES 51

IDENTIFICATION OF THE PREFERRED ALTERNATIVE 54

ELEMENTS COMMON TO ALL OF THE ALTERNATIVES (ALTERNATIVES A, B, AND C) 55
Resource Management 55
Visitor Use 55
Monument Management 56

ALTERNATIVE A—NO ACTION 57
Concept 57
Zoning 57
Monumentwide 57
Heritage Addition 57
Visitor Center, Administrative Offices, and Maintenance Area (in the North Unit) 57
North Unit 58
South Unit 58
Sny Magill Unit 58

ELEMENTS COMMON TO BOTH ACTION ALTERNATIVES (ALTERNATIVES B AND C) 63
Heritage Addition 63
Visitor Center, Administrative Offices, and Maintenance Area 63
North Unit 64
South Unit 64
Sny Magill Unit 64
Future Acquisitions 64

ALTERNATIVE B (NPS PREFERRED ALTERNATIVE) 66
Concept 66
Heritage Addition 66
Visitor Center, Administrative Offices, Maintenance Area (Development Zone in the North Unit) 66
North Unit 67
South Unit 67
Sny Magill Unit 68
Virtual Research Center 68

ALTERNATIVE C 71
Concept 71
Heritage Addition 71
Visitor Center, Administrative Offices, Maintenance Area (Development Zone in the North Unit) 71
North Unit 71
South Unit 72
Sny Magill Unit 72
Research Center 73

ESTIMATED COSTS 77
Alternative A (No Action) 77
Alternative B (NPS Preferred Alternative) 77
Alternative C 78

ENVIRONMENTALLY PREFERABLE ALTERNATIVE 80

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM DETAILED EVALUATION 82

MITIGATIVE MEASURES COMMON TO ALL ACTION ALTERNATIVES 84
Cultural Resources 84
Natural Resources 85

FUTURE STUDIES AND IMPLEMENTATION PLANS NEEDED 88

SUMMARY TABLES 90

CHAPTER 3: AFFECTED ENVIRONMENT

CULTURAL RESOURCES 103
Background 103
Archeological Resources 104
Ethnographic Resources 105
Cultural Landscapes 106
Museum Collections 107

NATURAL RESOURCES 109
Soils 109
Wild and Scenic Rivers 110
Vegetation 110
Fish and Wildlife 111
Special Status Species 113
Viewsheds 116

VISITOR USE AND UNDERSTANDING 118
Visitor Experience 118
Visitor Understanding 120
Visitor Safety and Access 120
Recreational Use of the Yellow River 121

SOCIOECONOMIC ENVIRONMENT 122
Socioeconomic Benefits of the National Park Service 122
Economics in the Study Area 122
Visitor Spending in The Planning Area 123

MONUMENT OPERATIONS AND FACILITIES 125

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

INTRODUCTION 129
Terms and Assumptions 129
Cumulative Impacts 130

CULTURAL RESOURCES 132
Types of Cultural Resources 132
Section 106 of the National Historic Preservation Act Methodology 132
Archeological Resources 133
Cultural Landscapes 138
Ethnographic Resources 142
Museum Collections 145

NATURAL RESOURCES 149
Introduction 149
Soils 149
Wild and Scenic Rivers 152
Vegetation 154
Fish and Wildlife 157
Special Status Species 160
Visual Resources/Viewsheds 163

VISITOR USE AND EXPERIENCE 166
Methodology 166
Impacts from Implementing Alternative A 167
Impacts from Implementing Alternative B 169
Impacts from Implementing Alternative C 171

SOCIOECONOMIC ENVIRONMENT 175
Methodology 175
Impacts from Implementing Alternative A 176
Impacts from Implementing Alternative B 176
Impacts from Implementing Alternative C 177

MONUMENT OPERATIONS AND FACILITIES 180
Methodology 180
Impacts From Implementing Alternative A 180
Impacts from Implementing Alternative B 181
Impacts from Implementing Alternative C 182

NATURAL OR DEPLETABLE RESOURCES AND ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL 183
Introduction 183
Alternative B 183
Alternative C 184

CLIMATE CHANGE 185
Background 185
Relevant Laws and Policies 185

UNAVOIDABLE ADVERSE IMPACTS 187

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES 188

RELATIONSHIPS BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY 189

CHAPTER 5: CONSULTATION AND COORDINATION, PREPARERS AND CONSULTANTS

PUBLIC AND AGENCY INVOLVEMENT 193
Public Involvement and Response to Comments 193
Consultation with Other Agencies/Officials and Organizations (To Date) 219

AGENCIES AND ORGANIZATIONS RECEIVING A COPY OF THIS DOCUMENT 221

PREPARERS AND CONSULTANTS 223

APPENDIXES, REFERENCES, AND INDEX

APPENDIX A: LEGISLATION SUMMARY 227

APPENDIX B: LETTERS TO AND FROM THE U. S. FISH AND WILDLIFE SERVICE AND IOWA DEPARTMENT OF NATURAL RESOURCES 229

APPENDIX C: LETTERS TO AND FROM THE IOWA STATE HISTORIC PRESERVATION OFFICER, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND AMERICAN INDIAN TRIBES 239

APPENDIX D: YELLOW RIVER WILD AND SCENIC RIVER ASSESSMENT 261

APPENDIX E: SPECIAL STATUS SPECIES KNOWN IN THE MONUMENT 271

APPENDIX F: KNOWN, PROBABLE, AND POSSIBLE MOUND LOCATIONS IN DEVELOPED AREA 273

REFERENCES 277

INDEX 279

TABLES

Table 1. Laws, Mandates, and Policies Pertaining to Effigy Mounds National Monument 15
Table 2: User Capacity Indicators and Standards 41
Table 3. Management Zones 51
Table 4. Estimated Costs of the Alternatives (in 2010 Dollars) 79
Table 5. Environmentally Preferable Alternative 81
Table 6. Summary of Alternatives 90
Table 7. Summary of Key Impacts 96
Table 8. Soils 109
Table 9. Effigy Mounds Visitation Figures 119
Table 10. Visits and Spending by Visitor Segment, 2006 124
Table 11. Economic Effects of Visitor Spending by Sector, 2006 124
Table 12. Response to Comments 195

FIGURES

Figure 1. Region 8
Figure 2. Effigy Mounds National Monument 9
Figure 3. User Capacity Framework 37
Figure 4. Recommended Boundary Adjustments 48
Figure 5. Alternative A 61
Figure 6. Alternative B 69
Figure 7. Alternative C 75

1 Background

Presentation at Effigy Mounds National Monument

A GUIDE TO THIS DOCUMENT

This *Final General Management Plan / Environmental Impact Statement* (GMP) is organized in accordance with the Council on Environmental Quality (CEQ) implementing regulations for the National Environmental Policy Act (NEPA), NPS *Program Standards for Park Planning*, and Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*.

Chapter 1: Introduction sets the framework for the entire document. It describes why the plan is being prepared and what needs it must address. It gives guidance for the alternatives that are being considered based on the national monument's legislated purpose, the significance of its resources, special mandates and policies, and fundamental and other important resources and values.

The chapter also details the planning opportunities and issues that were raised during public scoping meetings and initial planning team efforts; the alternatives in the next chapter address these issues and concerns to varying degrees. This chapter concludes with a statement of the scope of the environmental impact analysis—specifically what impact topics were or were not analyzed in detail.

Chapter 2: Alternatives, Including the Preferred Alternative, describes the user capacity framework, recommended boundary adjustments, and the management zones that would be used to manage the national monument in the future. This chapter also describes three alternative ways of addressing the issues and maintaining the monument's purpose and significance. One alternative consists of continuation of current management and trends in the monument (alternative A, the no-action alternative). Alternatives B and C are the "action" alternatives. This section is followed by the estimated costs associated with each of the alternatives.

The next sections include the evaluation of the environmentally preferable alternative, a discussion of alternatives or actions that were dismissed from detailed evaluation, mitigative measures proposed to minimize or eliminate the impacts of some proposed actions, and future studies and implementation plans that will be needed.

The chapter ends with summary tables of the alternative actions and the environmental consequences of implementing those alternative actions.

Chapter 3: Affected Environment describes those areas and resources that would be affected by implementing actions in the various alternatives—cultural resources, natural resources, visitor use and experience, socioeconomic environment, and monument operations.

Chapter 4: Environmental Consequences analyzes the impacts of implementing the alternatives on topics described in the "Affected Environment" chapter. Methods used for assessing the impacts in terms of intensity, type, and duration are outlined in the chapter.

Chapter 5: Consultation and Coordination describes the history of public and agency coordination during the planning effort and a response to comments; it also lists agencies and organizations that will be receiving copies of the document. This chapter also includes a list of preparers.

The **Appendixes** present supporting information for the document and the wild and scenic river assessment, followed by **References**, and an **Index.**

INTRODUCTION

This document is the *Final General Management Plan / Environmental Impact Statement*, which replaces the *Revised Draft General Management Plan / Environmental Impact Statement* for Effigy Mounds National Monument released in August 2011.

This *Final General Management Plan / Environmental Impact Statement* presents and analyzes three alternative future directions for the management and use of Effigy Mounds National Monument. Alternative B is the NPS preferred alternative and is also the environmentally preferable alternative. The potential environmental impacts of all alternatives have been identified and assessed.

General management plans are intended to be long-term documents that establish and articulate a management philosophy and framework for decision making and problem solving in the parks. This general management plan is intended to provide guidance for the next 15 to 20 years.

Actions directed by general management plans or in subsequent implementation plans are accomplished over time. Budget restrictions, requirements for additional data or regulatory compliance, and competing national park system priorities prevent immediate implementation of many actions. Major or especially costly actions could be implemented 10 or more years into the future.

PURPOSE OF THE PLAN

The approved general management plan will be the basic document for managing Effigy Mounds National Monument for the next 15 to 20 years. The purposes of this general management plan are as follows:

- Confirm the purpose, significance, and fundamental resources and values of Effigy Mounds National Monument.
- Clearly define the resource conditions and visitor uses and experiences to be achieved in the national monument. Provide a framework for managers to use when making decisions about how to best protect resources, how to provide quality visitor uses and experiences, how to manage visitor use, and what kinds of facilities are needed and appropriate in or near the monument.
- Ensure that this framework for decision making has been developed in consultation with interested stakeholders and adopted by NPS leadership after adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

Legislation establishing the National Park Service and governing park management provides the fundamental direction for the administration of Effigy Mounds National Monument (and other units and programs of the national park system). This general management plan builds on these laws, NPS policies, and legislation that established the monument to provide a vision for the future.

The "Servicewide Laws and Policies" section calls the reader's attention to topics that are important to understanding the management direction at the national monument. This section presents a summary of the topics and conditions to which management is striving, including

more detail on the law or policy directing management actions. The alternatives in this general management plan address the desired future conditions that are not mandated by law and policy, and which must be determined through a planning process.

NEED FOR THE PLAN

The existing general management plan for Effigy Mounds National Monument does not provide adequate management guidance in several key areas. Since the completion of the 1990 general management plan for the monument and the 1999 amendment, several conditions changed or emerged that prompt the need for a new plan:

- The 1,045-acre Heritage Addition expanded the monument's land base by approximately 70% and added several cultural resources, including mounds and extensive natural areas.
- Management of resources and visitor needs at the Sny Magill Unit are not adequately addressed in the previous general management plan.

THE NEXT STEPS

After distribution of the *Final General Management Plan / Environmental Impact Statement,* there will be a 30-day no action period after which the NPS planning team will prepare a record of decision, which may be signed by the regional director. With the signing of the record of decision and its publication in the *Federal Register*, the plan can be implemented.

IMPLEMENTATION OF THE PLAN

The implementation of the approved plan, no matter which alternative, would depend on future NPS funding levels and servicewide priorities, and on partnership funds, time, and effort. The approval of a general management plan does not guarantee that funding and staffing needed to implement the plan would be forthcoming. Full implementation of the plan could be many years in the future.

Implementation of the approved plan could also be affected by other factors. Once the general management plan is approved, additional feasibility studies and more detailed planning and environmental documentation would be completed, as appropriate, before any proposed actions would be carried out. Examples include the following:

- Appropriate permits would be obtained before implementing actions that would impact wetlands.
- Appropriate federal and state agencies would be consulted concerning actions that could affect threatened and endangered species.
- Traditionally associated American Indian tribes, Office of the State Archaeologist, and the Iowa state historic preservation officer would be consulted.
- As appropriate, NEPA documentation would be prepared prior to any action.

The general management plan does not describe how particular programs or projects should be prioritized or implemented. Those decisions would be addressed during the more detailed planning associated with strategic plans, implementation plans, etc. All future, more detailed plans would be based on the goals, future conditions, and appropriate types of activities established in the approved general management plan.

DESCRIPTION OF THE MONUMENT

Effigy Mounds National Monument was authorized by Presidential Proclamation 2860 on October 25, 1949. The monument currently comprises 2,526 acres in northeastern Iowa in two counties: Allamakee and Clayton. It is divided into four units for the purposes of this management plan: North Unit, South Unit, Heritage Addition, and Sny Magill Unit (see region and park maps). Land surrounding Effigy Mounds National Monument is managed by the U.S. Fish and Wildlife Service (USFWS), the State of Iowa, and private landowners. Land uses in the area include agriculture (farming, timber cutting, and livestock grazing), rural development, resources management, recreation, and transportation.

The monument represents an important link in a complex of protected areas that preserve many of the values characteristic of this region. Much of the nearby Mississippi River bank and island area is managed by the U.S. Fish and Wildlife Service as the Upper Mississippi River National Wildlife and Fish Refuge, a 261-mile-long preserve that extends from Wabasha, Minnesota, to Rock Island, Illinois. Yellow River State Forest lies adjacent to the Heritage Addition. Between the currently developed monument units and the Sny Magill Unit is Pikes Peak State Park, which preserves several effigy mounds and bluff tops much like those of the monument. The Iowa Department of Natural Resources (IDNR) manages small tracts of land and recreation sites near the monument. The Iowa Department of Natural Resources also manages the access road and boat ramp in the Sny Magill Unit.

CLIMATE

The climate is typical of the Upper Midwest United States with large annual and daily fluctuations. In the winter, snowfall averages about 32 inches. The normal January low/high temperatures are 6/24 degrees Fahrenheit (°F), with 160 days of the year below freezing. Summer low/high temperatures in July are 61/83°F. The average length of the growing season is 140 days with an average annual precipitation of 32 inches. The Mississippi River has a moderating effect on the climate in the valley that reduces the variance of temperature extremes. This allows plants that are adapted to warmer conditions to exist farther north than their normal range.

GEOGRAPHY

Effigy Mounds National Monument is located on the bluffs and floodplain of the Mississippi River. Elevation of the monument varies from about 615 feet above sea level at the Sny Magill Unit to just over 1,000 feet in the western part of the Heritage Addition. Surface topography around the monument is composed of abruptly rising bluffs, deep valleys, and relatively flat ridge tops. In some places the bluffs rise 300 feet above the Mississippi River. The North and South units and the Heritage Addition are predominantly uplands with steep bluffs and old open fields on the highest upland flat areas. Uplands above the 900-foot level comprise about 50% of the monument area. The area of steep slopes rising from the floodplain up to the 900-foot level make up about 25% of monument lands, while the remaining 25% of the lands consist of

floodplains, water impoundments, and waterways (NPS 1999).

The monument lies in a geologically unique area of erosional topography drained by an intricate system of rivers and streams. Erosional forces have cut through a plain leaving high divides and precipitous bluffs above adjacent waterways. Although geologic deposits from earlier Ice Age events have been found, the last glacial period did not cover the area that is now the northeast corner of Iowa, so this eroded landform is commonly referred to as the Driftless Area. Generally speaking, the Driftless Area contains both the Paleozoic Plateau and the Silurian Escarpment, which is a landform transition between the Paleozoic Plateau and the glaciated land to the west in Iowa.

MONUMENT UNITS

North Unit

The monument's headquarters, maintenance facility, and visitor center are in the North Unit. Trails in this unit allow visitors to view the mounds and scenic views on self-guided walks of varying distances (longest trail is 7 miles round trip). Wayside exhibits along the trails provide interpretive messages. Ranger-guided interpretive tours are available on a seasonal basis. Little Bear Mound (one of the monument's finest examples of the effigy style), Great Bear Mound (the largest effigy mound in the monument), and many other mound groups are in the North Unit. In addition, spectacular views of the Mississippi River Valley are available from Eagle Rock, Fire Point, Third Scenic View, and Hanging Rock.

South Unit

The South Unit contains the renowned Marching Bear Group of mounds. Access to the South Unit is by foot from the Iowa Department of Natural Resources day use area. It is a 4-mile round-trip hike to the Marching Bear Group from the day use area.

A major concern is that visitors must cross railroad tracks and a busy highway to access the South Unit from the day use area. Another concern is that the southern property boundary fence is only about 20 feet from the nearest mound and incompatible uses could occur on the adjacent private property.

Heritage Addition

This 1,045-acre unit was added in 2000, increasing the monument's land base by approximately 70%. Most access to this unit currently requires crossing private land. There are five known mounds, five prehistoric stone quarries, four historic sites, the Yellow River, Dousman Creek, and an abundance of natural resources in this unit. There are also abandoned logging roads that could be used as foot trails. This unit is not advertised and is not shown on the current monument brochure.

Sny Magill Unit

This small 141-acre unit is located in the floodplain on the west bank of the Mississippi River about 10 miles south of the headquarters/visitor center. The Iowa Department of Natural Resources maintains a boat ramp, parking area, and access road into the unit. With over 100 mounds, the Sny Magill Unit contains 50% of all mounds in the monument. It also has the highest concentration of mounds known in the region. A trail leads from the access road to mounds in the northern end of the unit. This unit is not advertised and not shown on the monument brochure. There are no visitor services or NPS presence in this unit; there is not much indication that it is a national park system unit.

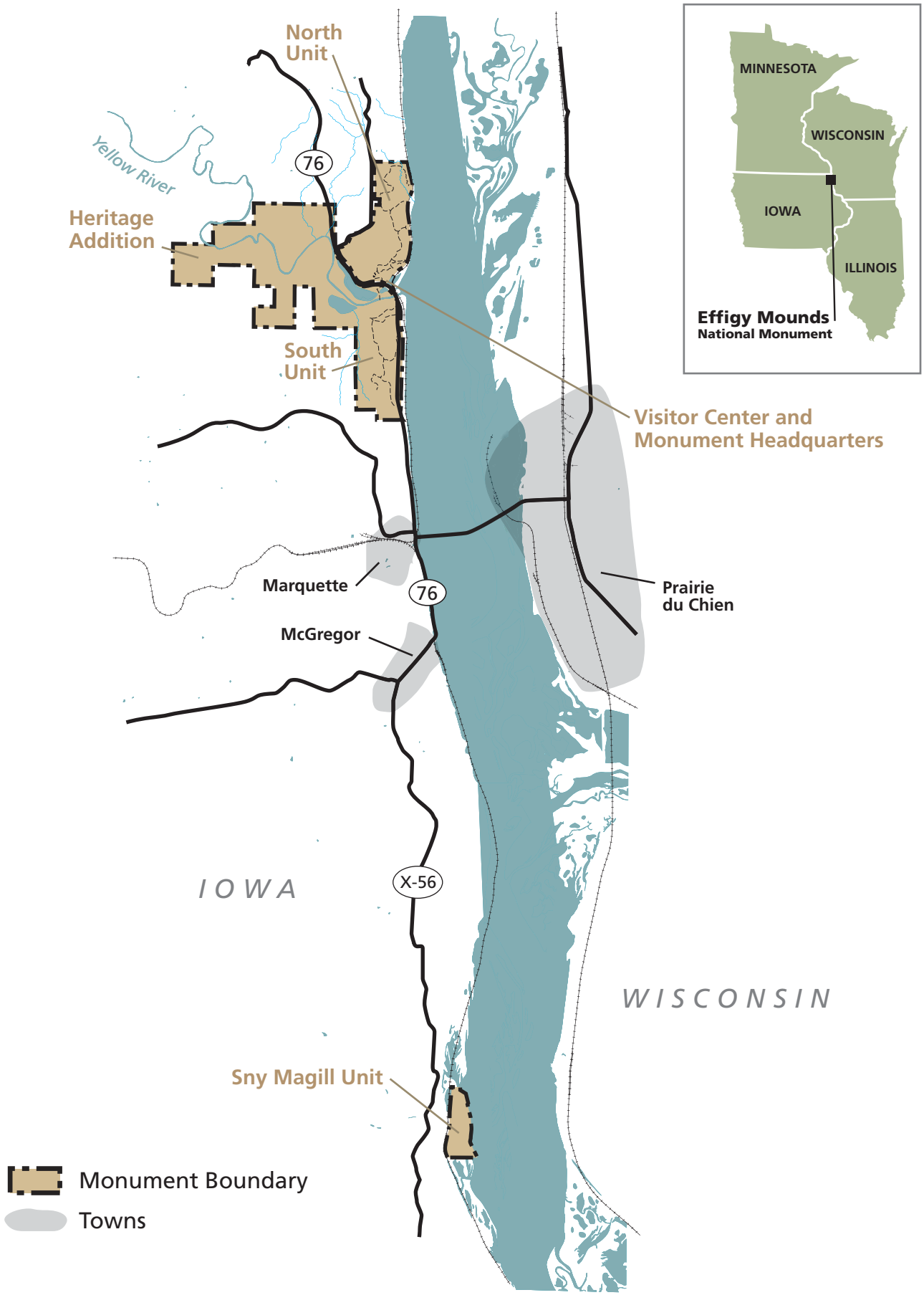


FIGURE 1: REGION

EFFIGY MOUNDS NATIONAL MONUMENT

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

DSC / Feb 2011 / 394 / 20,022B

NOTES:
*The park is in the process of completing a boundary survey. The boundary shown on this map is for illustrative purposes only.

HERITAGE ADDITION

NORTH UNIT

SOUTH UNIT

Smokey Hollow Road

County Road (Restricted Use)

Yellow River

Dousman Creek

Founders Pond

76

Mississippi River

IOWA

WISCONSIN

Pleasant Ridge Road

0 0.5 1 Miles

SNY MAGILL UNIT

Johnsons Slough

X56

Sny Magill Creek

Entrance Road

0 0.25 0.5 Miles

Legend

- Public Road
- County Road
- State Boundary
- Waterbody
- National Monument Boundary
- Non-NPS Land within Park Boundary

Figure 2: Park

EFFIGY MOUNDS NATIONAL MONUMENT

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

DSC/November 2011

FOUNDATION FOR PLANNING AND MANAGEMENT

MONUMENT PURPOSE AND SIGNIFICANCE

Monument Purpose

Purpose statements are based on the national monument's legislation and legislative history and NPS policies. The statement reaffirms the reasons for which the national monument was set aside as a unit of the national park system and provide the foundation for management and use.

> *Effigy Mounds National Monument preserves outstanding representative examples of significant phases of prehistoric Indian moundbuilding cultures in the American Midwest; protects wildlife and natural values within the monument; and provides for scientific study and appreciation of its features for the benefit of this and future generations.*

Significance Statements and Associated Fundamental and Other Important Resources and Values

Significance statements capture the importance of the national monument to the country's natural and cultural heritage. Significance statements do not inventory national monument resources; rather, they describe the national monument's distinctiveness and help to place the monument within its regional, national, and international contexts. Significance statements answer questions: *Why are Effigy Mounds National Monument's resources distinctive? What do they contribute to the natural/cultural heritage?* Defining the significance and associated fundamental resources helps managers make decisions that preserve the resources and values necessary to accomplish the national monument's purpose. *Fundamental resources and values* are critical in fulfilling the monument's purpose and maintaining its significance. *Other important resources and values* are otherwise important to park planning and management. Identifying fundamental and other important resources and values helps to focus management on the features most important in the monument.

Significance 1. The national monument contains nationally significant archeological resources comprising one of the largest concentrations of burial mounds in the United States, including some of the finest and best preserved examples of effigy mounds in their original forms. These cultural features provide an insight into the social, spiritual, and ceremonial life of peoples in this region prior to European contact.

> **Fundamental Resources and Values—** These resources include the primary archeological sites in all units of the monument, including all their features such as mounds, rock shelters, habitation sites, rock art, and associated artifacts, representing 1,800 years of the moundbuilding culture. While the Heritage Addition has not yet had a systematic archeological inventory completed, some mounds have been discovered in that area. The resources of that area are included as fundamental resources.

Significance 2. The natural and cultural resources of the monument are intricately connected—the moundbuilding cultures were the result of the dynamic interface of people and their environment. The native vegetation communities associated with

the moundbuilding era were the result of the topography and climate found in the geologically unique Driftless Area of the Upper Midwest. This environment produced microhabitats that support extensive flora and fauna diversity. This diversity attracted and sustained generations of American Indians.

Fundamental Resources and Values— The monument contains habitat for an assemblage of plants found nowhere else in Iowa and rare in the region. This habitat includes both the transition zone of several vegetation communities found in the eastern hardwood and prairie ecosystems and microclimates produced by north-facing slopes and the influence of the river valley.

Habitat, including wetlands, for almost 300 species of birds, including nesting habitat for the red-shouldered hawk (a state listed species) and habitat for several other federal- and state listed animal and plant species, including bald eagles, peregrine falcons, Higgins eye pearlymussel, purple fringed orchid, and jeweled shooting star.

Important Resources and Values— The Yellow River is listed in the *Nationwide Rivers Inventory* and possesses outstandingly remarkable values.

The topography associated with the Driftless Area reveals 500-million-year-old limestone bedrock.

The exposed 400-foot bluffs overlooking the Mississippi River feature American Indian rock art sites, rock shelters that were important as habitation sites, and chert outcroppings that were locally important for making tools and weapons.

Significance 3. The monument contains historic resources that represent European American settlement of the area and the displacement of historic American Indian culture. Conversely, early scientific research conducted in the monument during the late 1800s began the period of understanding and preserving of the rich Indian culture.

Important Resources and Values— The monument includes a road built in 1840 by the military that connected Fort Crawford, Wisconsin Territory, with Fort Atkinson, Iowa, and a historic archeological site—the Jefferson Davis sawmill—that supported the building of Fort Crawford. These are some of the reminders of how early 19th-century American Indian treaties involved the military in resolving "the Indian problem" and opened up the territories for United States expansion and settlement prior to the Mexican War.

Additional historic sites within the monument document early American use of the land for homesteading; agriculture; and economic, consumptive purposes, such as clamming, logging, and quarrying. These sites are tangible connections to the early western expansion of America.

Significance 4. The monument preserves and protects physical evidence of the cultural landscape, which documents the early and continuing scientific interest in the mounds and moundbuilding cultures. The monument's cultural resources and collections document the full breadth of archeological investigations in the monument, from early mound documentation and exploration to modern methods of archeological investigation that incorporate a variety of techniques and native perspectives.

Fundamental Resources and Values— The monument's collections include original documents, photographic collections, and artifact collections that both document the important contributions of Ellison Orr and others to the early development of the science of field archeology relating to the

moundbuilding cultures and support future scientific study and interpretation of paleontology, natural history, geology, history, and ethnology.

Significance 5. The monument is identified by present-day members of the monument's traditionally associated tribes as a sacred landscape.

Fundamental Resources and Values— The individual resources of the monument listed previously as fundamental and important resources—mounds and associated artifacts, native vegetation, and rivers—collectively form a cultural landscape. Tribes and NPS staff are pursuing a designation that would acknowledge the entire national monument as a traditional cultural property. Some natural resources present in the monument, such as medicinal and ceremonial plants, are also culturally important, contributing to the importance of the area to modern American Indian tribes.

PRIMARY INTERPRETIVE THEMES

Primary interpretive themes are the key stories, concepts, and ideas of a park that the NPS staff use for educating visitors about the monument and for inspiring visitors to care for and about the resources. With these themes, visitors can form intellectual and emotional connections with monument resources and experiences. Subsequent interpretive planning may elaborate on these primary themes. Based on the park's purpose, significance, and primary resources, the following interpretive themes have been developed:

- Effigy Mounds National Monument preserves earthen mounds that are a manifestation of a sophisticated moundbuilding culture composed of several cultural systems that allowed the inhabitants to maintain a balance with the natural environment. These cultural systems of social organization (required to harness the labor to build the mounds), spiritual expression (the mounds), economics (widespread trade networks), and horticulture and early agriculture, allowed these peoples to invest the time and labor necessary to build the mounds.
- The notable erosional features of the Driftless Area set the framework for a unique assemblage of prairie and forest, wetlands and upland, and warm and cool environments that are home to highly diverse communities of plants and animals. This provides an opportunity to study the intricate connection between the moundbuilding people and the dynamic continuum of the natural world that had a profound impact on the evolution of a complex American Indian culture.
- The design and extent of ancient mound construction reveals not only the cultural sophistication and foresight of generations of moundbuilders, but also illustrates the special value they placed in their shared community beliefs and in these sacred places.

With European and American expansion, forces swept over the Effigy Mounds area, removed the American Indian residents and displaced their culture. Ironically, the monument, as a sacred site, includes remnants of these cultural conflicts and the forces of "nation- building" revealed by the old military road that connected Fort Crawford to Fort Atkinson, the Jefferson Davis sawmill site, the nearby Winnebago mission school, and a portion of the Neutral Ground (a "buffer zone" established by the U.S. Government to control American Indian movement and activity).

- The monument's cultural resources and collections document the full breadth of archeological investigations in the monument, from early mound documentation and exploration, to modern methods of archeological investigation that incorporates a variety of techniques and native perspectives. The monument continues to serve as a springboard for the progression of American archeology—from a simple fascination with "curiosities" to a scientific methodology that today incorporates the sacred nature of American Indian archeological sites.
- Combining a focus on less invasive archeological methods with continued consultation with traditionally associated tribes allows a better understanding of American Indian traditions, history, and stories related to the moundbuilding cultures. Only by combining earlier methods of archeology, other less invasive methods of today, and the oral traditions and histories of the native peoples can we develop a deeper understanding of and spiritual connection with the past.

SPECIAL MANDATES OR ADMINISTRATIVE COMMITMENTS

Public Law 106-323 allowed for additional lands (50-acre Riverfront Tract) to be purchased from willing sellers and adjusted the monument boundary to include these lands. While the Riverfront Tract is in the legislated monument boundary, it remains in ownership of the Iowa Department of Natural Resources and the Canadian Pacific Railroad. Should this land become available, it may be purchased by the federal government and immediately included in the monument.

SERVICEWIDE LAWS AND POLICIES

Many management directives are specified in laws and policies guiding the National Park Service and, therefore, are not subject to alternative approaches. For example, there are laws and policies about managing environmental quality (such as the Clean Air Act; the Endangered Species Act; and Executive Order 11990, "Protection of Wetlands"); laws governing the preservation of cultural resources [such as National Historic Preservation Act (NHPA) and Native American Graves Protection and Repatriation Act (NAGPRA)]; and laws about providing public services (such as Americans with Disabilities Act). In other words, a general management plan is not needed to decide, for instance, that it is appropriate to protect endangered species, protect archeological sites, conserve artifacts, or provide for handicap access. Laws and policies have already decided those and many other things. Although attaining some of the conditions set forth in these laws and policies may be temporarily deferred in a park because of funding or staffing limitations, the National Park Service would continue to strive to implement these requirements whether or not a park has a current general management plan.

Some of these laws and executive orders are applicable solely or primarily to units of the national park system. These include the NPS Organic Act of 1916 that established the National Park Service; General Authorities Act of 1970; act of March 27, 1978, relating to management of the national park system; and National Parks Omnibus Management Act (1998). Other laws and executive orders have much broader application, such as the Endangered Species Act, the National Historic Preservation Act, and Executive Order 11990.

The NPS Organic Act (16 United States Code (USC)1) provides the fundamental

management direction for all units of the national park system:

> *[P]romote and regulate the use of the Federal areas known as national parks, monuments, and reservations. . .by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.*

The NPS General Authorities Act (16 USC 1a-1, et seq.) affirms that while all national park system units remain "distinct in character," they are "united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage." The act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the national park system. Further, amendments state that NPS management of park units should not "derogat[e] . . . the purposes and values for which these various areas have been established."

The National Park Service also has established policies for all units under its stewardship. These are identified and explained in a guidance manual titled NPS *Management Policies 2006*. The action alternatives (alternatives B and C) considered in this document incorporate and comply with the provisions of these mandates and policies.

The Wild and Scenic Rivers Act, section 5(d)(1) requires that consideration be given by all federal agencies to potential national wild, scenic, and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials.

Table 1 shows some of the most pertinent servicewide mandates and policies related to planning and management goals at Effigy Mounds National Monument. Because these goals are discussed in terms of "desired conditions," the table is written in the present tense. The alternatives in this management plan address the desired future conditions that are not mandated by law and policy and must be determined through a planning process.

TABLE 1. LAWS, MANDATES, AND POLICIES PERTAINING TO EFFIGY MOUNDS NATIONAL MONUMENT

CULTURAL RESOURCES MANAGEMENT	
ARCHEOLOGICAL RESOURCES	
Desired Conditions	**Sources**
Archeological sites are identified and inventoried and their significance is determined and documented. Archeological sites are preserved and protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable. When disturbance or deterioration is unavoidable, the site is professionally documented and excavated in consultation with the Iowa state historic preservation officer and traditionally associated tribes. Resulting artifacts, materials, and records are curated, conserved, and/or repatriated. Some archeological sites that can be adequately protected may be interpreted to the visitor.	National Historic Preservation Act; Native American Graves Protection and Repatriation Act; Executive Order 11593, "Protection and Enhancement of the Cultural Environment"; Archeological Resources Protection Act; *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*; Programmatic Agreement among the National Park Service, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (2008); NPS *Management Policies 2006*; Director's Order 28: *Cultural Resource Management Guideline*; Director's Order 28A: *Archeology*; and Executive Order 13007, "Indian Sacred Sites"
Examples of Compliance Actions The National Park Service would take the following actions to meet legal and policy requirements related to archeological sites: ▪ Complete archeological surveys of all units of the national monument. ▪ If archeological resources are discovered, they would be treated as eligible for listing in the National Register of Historic Places (national register) pending a formal determination of their significance by the National Park Service, the Iowa state historic preservation officer and traditionally associated American Indian tribes. ▪ Protect all archeological resources; if disturbance to such resources is unavoidable, conduct formal consultation with the Iowa state historic preservation officer, traditionally associated American Indian tribes, and, as necessary, with the Advisory Council on Historic Preservation. ▪ When archeological resources are discovered, consult with traditionally associated American Indian tribes. ▪ In advance of any new development, or modification of existing developments, consult with the Iowa state historic preservation officer and traditionally associated American Indian tribes.	
HISTORIC AND PREHISTORIC STRUCTURES	
Desired Conditions	**Sources**
Historic structures are inventoried and their significance and integrity are evaluated under National Register of Historic Places criteria. The qualities that contribute to the listing or eligibility for listing of historic structures in the national register are protected in accordance with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (unless it is determined through a formal process that disturbance or natural deterioration is unavoidable).	National Historic Preservation Act; Executive Order 11593; Archeological Resources Protection Act; *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*; Memorandum of Agreement among the National Park Service, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (2008); NPS *Management Policies 2006;* Director's Order 28: *Cultural Resources Management;* and NPS List of Classified Structures.
Examples of Compliance Actions ▪ Maintain and certify the List of Classified Structures—the NPS inventory of all historic and prehistoric structures that have historical, architectural, or engineering significance. ▪ Determine the appropriate level of preservation for each historic structure formally determined to be eligible for listing or already listed in the National Register of Historic Places.	

TABLE 1. LAWS, MANDATES, AND POLICIES PERTAINING TO EFFIGY MOUNDS NATIONAL MONUMENT

CULTURAL LANDSCAPES	
Desired Conditions	**Sources**
Cultural landscape inventories are conducted to identify landscapes potentially eligible for listing in the National Register of Historic Places, and to assist in future management decisions for landscapes and associated resources, both cultural and natural. A cultural landscape report clearly identifies the landscape characteristics and associated features, values, and associations that make a landscape historically and culturally significant. The content of a cultural landscape report provides the basis for making sound decisions about management, treatment, and use. The management of cultural landscapes focuses on preserving the landscape's physical attributes, biotic systems, and use (when that use contributes to its historical significance).	National Historic Preservation Act; Executive Order 11593, ; Archeological Resources Protection Act; *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*; Programmatic Agreement among the National Park Service, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (2008); Executive Order 13007, "Indian Sacred Sites"; NPS *Management Policies 2006*; Director's Order 28: *Cultural Resources Management Guidelines*; List of Classified Structures; Cultural Landscape Inventory
Examples of Compliance Actions ▪ Maintain and certify the cultural landscapes inventory—an evaluated inventory of all landscapes having historical significance in which the National Park Service has acquired or plans to acquire legal interest. ▪ Update the current cultural landscapes inventory to determine whether an "ethnographic landscape" exists, to determine its boundaries, and to document any resources. ▪ Complete the cultural landscape report for the monument. ▪ Maintain cultural landscapes according to the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.	
MUSEUM COLLECTIONS	
Desired Conditions	**Sources**
All museum collections (prehistoric and historic objects, artifacts, works of art, archival documents, and natural history specimens) are identified and inventoried, catalogued, documented, preserved, and protected; and provision is made for access to and use of them for exhibits, research, and interpretation according to NPS standards. The qualities that contribute to the significance of collections are protected in accordance with established standards.	National Historic Preservation Act; Archeological Resources Protection Act; *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* ; NPS *Management Policies 2006*; Director's Order 24: *NPS Museum Collections Management*
Examples of Compliance Actions ▪ Inventory and catalog all museum collections in accordance with standards in Director's Order 24: *Museum Collections Management* and the NPS *Museum Handbook*. ▪ Develop and implement a collection management program according to NPS standards to guide the protection, conservation, and use of museum objects.	

TABLE 1. LAWS, MANDATES, AND POLICIES PERTAINING TO EFFIGY MOUNDS NATIONAL MONUMENT

NATURAL RESOURCES MANAGEMENT	
SOILS	
Desired Conditions	**Sources**
The National Park Service actively seeks to understand and preserve the soil resources, and to prevent to the extent possible the unnatural erosion, physical removal, or contamination of the soil or its contamination of other resources. Natural soil resources and processes function in as natural condition as possible, except where special considerations are allowed under policy.	NPS *Management Policies 2006*
When soil excavation is an unavoidable part of an approved facility development project, the National Park Service would minimize soil excavation, erosion, and off-site soil migration during and after the development activity.	NPS *Management Policies 2006*
WATER RESOURCES	
Desired Conditions	**Sources**
Surface water and groundwater are protected, and water quality meets or exceeds all applicable water quality standards.	Clean Water Act; Executive Order 11514, "Protection and Enhancement of Environmental Quality"; NPS *Management Policies 2006*
NPS programs and facilities and NPS-permitted programs and facilities are maintained and operated to avoid pollution of surface water and groundwater.	Clean Water Act; Executive Order 12088, "Federal Compliance with Pollution Control Standards"; Rivers and Harbors Act; NPS *Management Policies 2006*
The Yellow River is managed to maintain the characteristics that make it eligible and suitable for inclusion in the National Wild and Scenic Rivers System.	Wild and Scenic Rivers Act, NPS *Management Policies 2006* (4.3.4)
Examples of Compliance Actions ▪ Continue monitoring water quality of the Yellow River and initiate monitoring of other waterways. When degraded water quality and/or flows occur, attempt to locate and mitigate at the source. ▪ Inform and educate visitors about the water resources. ▪ Take no management actions that could adversely affect the values that qualify the Yellow River for inclusion in the National Wild and Scenic Rivers System.	
FLOODPLAINS	
Desired Conditions	**Sources**
Natural floodplain values are preserved or restored.	Executive Order 11988, "Floodplain Management"; NPS *Management Policies 2006*
Long-term and short-term environmental effects associated with the occupancy and modifications of floodplains are avoided. When it is not practicable to locate or relocate development or inappropriate human activities to a site outside the floodplain or where the floodplain would be affected, the National Park Service: ▪ prepares and approves a statement of findings in accordance with Director's Order 77-2	Director's Order 77-2: *Floodplain Management*; NPS *Management Policies 2006*

TABLE 1. LAWS, MANDATES, AND POLICIES PERTAINING TO EFFIGY MOUNDS NATIONAL MONUMENT

▪ uses nonstructural measures as much as practicable to reduce hazards to human life and property while minimizing impacts on the natural resources of floodplains ▪ ensures that structures and facilities are designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR 60)	
Examples of Compliance Actions ▪ Prepare a quantitative analysis of the Yellow River and Mississippi River floodplains and the risk of damaging floods. ▪ Develop procedures to redirect visitors during a flood event. ▪ Inform visitors about the values of flooding and natural floodplains.	
NATIVE VEGETATION AND ANIMALS	
Desired Conditions	**Sources**
The National Park Service strives to maintain, as part of the natural ecosystem, native plants and animals in the national monument. Populations of native plant and animal species function in as natural condition as possible, except where special considerations are warranted. Native species populations that have been severely reduced in or extirpated from the national monument are restored where feasible and sustainable.	NPS *Management Policies 2006*
The management of nonnative plant and animal species, including eradication, would be conducted wherever such species threaten national monument resources or public health and when control is prudent and feasible.	NPS *Management Policies 2006*; Executive Order 13112, "Invasive Species"
THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES	
Desired Conditions	**Sources**
Federal and state listed threatened and endangered species and their habitats are protected and sustained.	Endangered Species Act; NPS *Management Policies 2006*
Native threatened and endangered species populations that have been severely reduced in or extirpated from the national monument are restored where feasible and sustainable.	NPS *Management Policies 2006*
Examples of Compliance Actions ▪ Conduct periodic inventories for special status species. ▪ Prepare and implement a resources stewardship strategy.	
NATURAL SOUNDSCAPES	
Desired Conditions	**Sources**
The natural soundscape of the monument would be preserved to the greatest extent possible.	NPS *Management Policies 2006*
Where soundscapes have been degraded by unnatural sounds (noise) they would be restored to a natural condition wherever possible.	NPS *Management Policies 2006*
Examples of Compliance Actions ▪ Identify what types and maximum levels of unnatural sound constitute acceptable impacts and monitor to determine when those levels are exceeded.	

TABLE 1. LAWS, MANDATES, AND POLICIES PERTAINING TO EFFIGY MOUNDS NATIONAL MONUMENT

VISITOR USE AND EXPERIENCE	
VISITOR USE AND EXPERIENCE	
Desired Conditions	**Source**
Cultural and natural resources are conserved "unimpaired" for the enjoyment of future generations. Visitors have opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the national monument. No activities occur that would cause derogation of the values and purposes for which the monument has been established. Visitors would have opportunities to understand and appreciate the significance of the national monument and its resources, and to develop a personal stewardship ethic. For all zones, units, or other logical management divisions in the monument, the types and levels of visitor use are consistent with the desired resource and visitor experience conditions prescribed for those areas.	NPS Organic Act; NPS *Management Policies 2006*; National Parks and Recreation Act (PL 95-625)
To the extent feasible, programs, services, and facilities are accessible to and usable by all people, including those with disabilities.	Americans with Disabilities Act; Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services*
Examples of Compliance Actions ▪ Give all visitors the opportunity to understand, appreciate, and enjoy the resources and values of the national monument. ▪ Continue to monitor visitor comments on issues such as crowding, access, and other experience-related topics. ▪ Identify implementation commitments for user capacities for all areas of the national monument.	

RELATIONSHIP OF OTHER PLANNING EFFORTS TO THIS GENERAL MANAGEMENT PLAN

Effigy Mounds National Monument is in Clayton and Allamakee counties, Iowa. Properties surrounding the park include state lands and privately owned residential and agricultural lands. There are no tribal lands nearby.

Several planning efforts have influenced or would be influenced by the approved general management plan for Effigy Mounds National Monument. Some of these plans are described briefly here, along with their relationship to this general management plan.

The monument is located within the Silos & Smokestacks National Heritage Area. As one of the federally designated heritage areas in the nation, it is an affiliated area of the national park system—the National Park Service does not own or manage the heritage area, but may provide some funding and technical support. The mission of the heritage area is to ensure that residents and visitors alike can learn about the significant contributions that northeast Iowa's people and land made to America's agricultural legacy. The Silos & Smokestacks National Heritage Area Board of Trustees provides the connecting element of this regional partnership network. The visitor attractions, sites, and communities are key partners in developing the national heritage area. Planning for the national heritage area in supporting tourism and economic activity is

generally compatible with the monument's management alternatives.

The Mississippi River Trail is a long-distance bicycle and pedestrian trail being developed along the Mississippi River from Minnesota to Louisiana. The National Park Service supports this effort and proposes that the monument become a destination point along the trail. However, bicycles are not allowed on monument trails, so the river trail must be routed outside the monument. The monument may provide bicycle racks at trailheads to accommodate this visitor group.

The U.S. Fish and Wildlife Service manages the Upper Mississippi National Wildlife and Fish Refuge located on the Mississippi River next to the monument. Monument staff review refuge planning documents for potential management conflicts, and the refuge staff review NPS documents. The U.S. Fish and Wildlife Service is proposing a visitor center to be built relatively near the Sny Magill Unit.

The Upper Mississippi National Wildlife and Fish Refuge is designated as a Ramsar Convention wildlife refuge. The Ramsar Convention on Wetlands is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. It was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975. It is the only global environmental treaty that deals with a particular ecosystem.

Because the national monument staff already works in concert with the U.S. Fish and Wildlife Service to preserve wetlands, the Ramsar Convention designation does not affect the way the national monument is managed.

The National Park Service would endeavor to remain involved with local and regional efforts to protect, manage, and interpret burial mounds and other cultural resources in the region.

PLANNING ISSUES AND CONCERNS

INTRODUCTION

The general public; NPS staff; representatives from other county, state, and federal agencies; and representatives from various organizations identified issues and concerns during scoping (early information gathering) for this general management plan. An issue is defined as an opportunity, conflict, or problem regarding the use or management of public lands. Comments were solicited at public meetings, through planning newsletters, and on the NPS planning website (see "Chapter 5: Consultation and Coordination"). Planning issues and concerns can change over time or have been addressed during the development of the plan. Additional issues were raised in response the *Effigy Mounds Revised Draft General Management Plan / Environmental Impact Statement*, responses to these comments are provided in "Chapter 5: Consultation and Coordination."

In general, visitors and others value the cultural and natural resources in the monument. They value the well-preserved burial mounds, scenic views, beauty, and natural resources. In addition, respondents appreciate the recreational opportunities (hiking, birding, etc.) and participation in the various programs and events that are offered at the monument.

The issue receiving the most comments was the need to improve/strengthen interpretive and education programs at the monument and in nearby communities (outreach). Concerns over the limited funding and workforce were expressed. The preservation of natural resources was identified as an important issue. Many people felt the National Park Service should partner with other local agencies and organizations to manage resources in a regional context.

The planning team also received many interesting ideas and suggestions for future management of the monument. Many respondents felt that the National Park Service is doing a good job and want the monument to stay the way it is now with no further development. Others would like to see more American Indian involvement. Commenters also said the National Park Service should continue or enhance its efforts to preserve cultural and natural resources. Some think the National Park Service should expand the visitor opportunities available at the monument and provide more trails, activities, or other visitor amenities.

Comments received during scoping demonstrated there is much that the public likes about the national monument—including its management, use, and facilities. The issues and concerns generally involve determining the appropriate visitor use, types, and levels of facilities and activities while protecting the primary resources. The GMP alternatives provide strategies for addressing the issues within the context of the monument's purpose, significance, and special mandates.

ISSUES

During public scoping for the planning process, many possible issues were proposed by the public and agency personnel. Some of these were not addressed in the plan because they are covered by law and policy, are outside the scope of the general management plan, or are better addressed in a site-specific plan. The following issues were identified by the public and NPS staff during the early phases of this planning effort.

Information, Education, and Access Issues

- Public access to the Heritage Addition is limited. The Yellow River runs through the Heritage Addition effectively splitting the area into two segments. Access to the southern portion of the Heritage Addition requires crossing private land. Access to the northern portion is limited by a lack of parking or safe vehicle pullouts from Highway 76.
- Orientation, wayfinding, facilities, and opportunities for hiking in the monument are lacking and do not meet visitor needs.
- The monument's difficult terrain and extensive archeological resources mean that providing universal access to all resources is difficult or nearly impossible.
- Visitors to the Sny Magill Unit do not receive orientation materials or contact with park staff. As a result, visitors are discouraged from visiting this area.
- The visitor center is overcrowded when school groups are present. The visitor center space is too small to meet the needs of the visitors and interpretive staff.

Cultural and Natural Resource Management Issues

- Additional resources related to the moundbuilders in the region need to be further researched, preserved, and interpreted.
- The boundary fence near Marching Bear group is too close to the mounds (approximately 20 feet) to protect the resource and provide for a quality visitor experience; the general management plan needs to consider how to protect both resources and the viewshed at the Marching Bear group.
- There are concerns about protecting key viewsheds seen from the monument; there is a need to mitigate visual encroachments.
- The current facility that houses the monument collections does not meet NPS museum collections standards for preservation or operational needs.
- There is a need for a wild and scenic river eligibility determination for the Yellow River.

Administrative Issues

- There is a need to more fully address management of and possible development in the Sny Magill Unit; there is a need for a stronger NPS presence there.
- Decisions on appropriate levels of access and development need to be made for the Heritage Addition.

IMPACT TOPICS DISCUSSED IN DETAIL

An important part of planning is seeking to understand the consequences of making one decision over another. To this end, NPS general management plans are typically accompanied by environmental impact statements. Environmental impact statements identify the anticipated impacts of possible actions on resources and on park visitors and neighbors. Impacts are organized by topic, such as "impacts on the visitor experience" or "impacts on vegetation and soils." Impact topics serve to focus the environmental analysis and to ensure the relevance of impact evaluation.

The impact topics identified for this general management plan are outlined in this section; they were identified based on federal laws and other legal requirements, CEQ guidelines, NPS management policies, staff subject-matter expertise, and the issues and concerns expressed by the public and other agencies early in the planning process (see previous section).

Impact topics, simply defined, are the resource categories that could be affected by the actions of the alternatives of the plan. The impact topics discussed below were derived from the issues identified during scoping and the potential for impacts.

CULTURAL RESOURCES

Cultural resource topics to be considered are of five overlapping types. They include the following:

Archeological Resources consist of artifacts, objects, or sites that evidence past human habitation or occupation over time. One or more of the alternatives could affect these resources; consequently, this topic is retained for detailed analysis.

Cultural Landscapes, either historic or ethnographic, that are distinctive features of the human-built environment or natural environment, or both, and that represent aspects of a way of life of a people, group, or family. One or more of the alternatives could affect this resource, so this topic is retained for detailed analysis.

Museum Collections consist of objects or records that relate to site history, setting, and occupation. One or more of the alternatives could affect this resource, so this topic is retained for detailed analysis.

Ethnographic Resources are those resources that are associated with a people's cultural system or way of life. They include technology, sites, structures, material features, and natural resources. Because access to and use of ethnographic resources is a topic of interest to American Indians, this topic is retained for detailed analysis.

Note: The mounds can be classified as structures, archeological and ethnographic resources, and/or components of the cultural landscape at Effigy Mounds National Monument. Of the 210 structures within the monument that are listed on the NPS List of Classified Structures, 208 are mounds. In this document, impacts to the mounds would be considered under "Archeological Resources." Two historic structures, the Military Road and a cistern, are not affected by proposals in the plan so "structures" as an impact topic was not considered further.

NATURAL RESOURCES

Soils

The soil in the area around Effigy Mounds originated from erosion of the limestone bedrock and was deposited by the wind or water in relatively recent times.

Soil can be affected by development, ecological restoration, and visitor use. Because alternatives presented in this plan include actions that would affect soil resources, this topic is retained for further analysis.

Wild and Scenic Rivers

Units of the national park system that contain one or more river segments listed in the *Nationwide Rivers Inventory* would comply with section 5(d)(1) of the Wild and Scenic Rivers Act, which instructs each federal agency to assess whether those rivers or segments are suitable for inclusion in the national wild and scenic rivers system.

A segment of the Yellow River within the monument is listed on the *Nationwide Rivers Inventory*, so this topic is retained for further analysis. Included in this general management plan is a study to determine if the Yellow River is eligible and suitable for inclusion in the national wild and scenic rivers system (appendix D)

Vegetation

The transition zone of several vegetation communities found in the eastern hardwood and prairie ecosystems and microclimates produced by north-facing slopes and the influence of the river valley provide habitat for an assemblage of plants found nowhere else in Iowa and rare in the region.

There is a concern about the spread of nonnative plants in the monument and the adverse effects these species could cause to native plants.

Alternatives presented in this plan could affect native and invasive nonnative vegetation, so this topic is retained for detailed analysis.

Fish and Wildlife

Effigy Mounds National Monument is home to an unusual diversity of fish, birds, and wildlife due to its location and habitat. As one of the largest preserved natural areas in Iowa, the monument may serve as a refuge for sensitive or representative flora and fauna.

Fish and wildlife concerns at the monument include preserving or restoring natural habitats and maintaining healthy populations of fauna. Alternatives presented in this general management plan could potentially affect fish or wildlife species or important habitat, so this topic is retained for analysis.

Special Status Species

Analysis of the potential impacts on special status species (federal or state endangered, threatened, or candidate species; or species of concern) is required by the Endangered Species Act, NPS management policies, the National Environmental Policy Act, and other regulations. One or more of the alternatives could affect special status species or their habitat so this topic is retained.

Viewsheds

Unobstructed natural views are becoming scarcer throughout the United States. They are especially important at the monument because they contribute to a sense of timelessness—an important quality of the Effigy Mounds experience. As expressed through comments received during public scoping, natural views are valued by the

public. Because of the importance of natural viewsheds, this topic is retained.

OTHER TOPICS

Visitor Use and Experience

The Organic Act of 1916 and NPS management policies require the National Park Service to provide opportunities for the enjoyment of a park unit's resources and values. This enjoyment comes from activities that are appropriate for each park unit. Scenic viewsheds and the ability to view the mounds up close are considered an important contributing factor to positive visitor experiences in this monument. Actions in one or more of the alternatives could affect visitor use and experience in the monument, so this topic is retained.

Socioeconomic Environment

National Environmental Policy Act requirements include an analysis of social and economic impacts caused by federal actions.

The economies of several nearby communities are affected by the monument. Changes to the way Effigy Mounds is managed or operated resulting from implementing one or more of the alternatives in this plan could influence the socioeconomic environment of nearby communities; consequently, this topic is retained for analysis.

Monument Operations and Facilities

Topics could include staffing, maintenance, facilities, ability to enforce park regulations and protect park values, employee and visitor health and safety, or administrative access.

Changes in monument operation needs could occur as a result of implementing any of the action alternatives, so this topic is retained for analysis.

Natural or Depletable Resources Requirements and Conservation Potential

Consideration of these topics is required by 40 CFR 1502.16. The National Park Service adopted the concept of sustainable design as a guiding principle of facility planning and development (NPS *Management Policies 2006*, 9.1). The objectives of sustainability are to design facilities to minimize adverse effects on natural and cultural values and to require the least amount of nonrenewable resources and energy.

Through sustainable design concepts, best management practices, and other resource management principles, all the alternatives analyzed in this document would contribute to conserving natural resources. Analysis of this topic has been combined with the following topic and placed at the end of the Environmental Consequences chapter.

Energy Requirements and Conservation Potential

One or more of the action alternatives could result in new facilities with inherent energy needs. In all alternatives, new facilities would be designed with long-term sustainability in mind. Nevertheless, action alternatives that call for additional structures could result in an increased energy need. Analysis of this topic has been combined with the previous topic at the end of the “Environmental Consequences” chapter.

Climate Change

Climate change refers to a suite of changes occurring in Earth’s atmospheric, hydrologic, and oceanic systems. Documented changes, including increased

global air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level, provide evidence that the climate system is warming. Any of the action alternatives at Effigy Mounds National Monument would, of course, have very little effect on the cumulative level of greenhouse gases or other climate change factors (e.g. carbon footprint) when viewed nationwide. Potential management actions could change the monument's contribution to climate change factors. This topic is discussed in chapter 4.

IMPACT TOPICS DISMISSED FROM FURTHER CONSIDERATION

HISTORIC BUILDINGS AND STRUCTURES

Historic buildings and structures are those that are important to local, regional, or national history and that are either listed in or eligible for listing in the National Register of Historic Places. No standing or intact historic buildings remain at Effigy Mounds National Monument. Although the mounds could be considered structures, in this analysis they have been treated as archeological resources.

Military Road is also being described and treated as an archeological resource, although several sections have been maintained for park trail and maintenance use. The houses near the maintenance building have been determined ineligible for the national register. Therefore, there would be no impact on historic buildings or structures and this topic has been dismissed from further analysis.

AIR QUALITY

The Clean Air Act states that managers have an affirmative responsibility to protect park air quality from adverse air pollution impacts. The monument is a Class II airshed according to guidelines in the 1977 amendments to the Clean Air Act. Under Class II, modest increases in air pollution are allowed beyond baseline levels for particulate matter, sulfur dioxide, nitrogen, and nitrogen dioxide, provided that the national ambient air quality standards, established by the U.S. Environmental Protection Agency (EPA), are not exceeded.

There are no major air pollution sources within or near the monument. Engine exhaust is the most common pollutant in the region and is heaviest around roads and highways, railroad tracks, and agricultural operations. Airborne particulates (e.g., dust and smoke) are generated from construction, agricultural operations, and the burning of fields or weeds.

Construction-related activities could occur with the implementation of an action alternative and local air quality may be temporarily affected by this activity. However, there would be no long-term effects on air quality so it was dismissed as an impact topic in this document.

WATER QUALITY AND QUANTITY

Groundwater at the monument is found in the Jordan-Prairie du Chien bedrock interval and is typically called the Jordan Aquifer. Local streams receive high proportions (70%–80% or more) of their base flow from groundwater, which provides important cold water characteristics of the streams.

The Yellow River originates in southeastern Winneshiek County, Iowa, and flows through the monument about 3.5 miles before joining the Mississippi River. A portion of the Yellow River, including the segment that runs through the monument, is currently listed on Iowa's impaired waters list for high levels of fecal coliform bacteria (Weeks 2006). Dousman Creek, a cold water trout stream, enters the Yellow River inside the monument boundary.

Sny Magill Creek is one of the more widely used streams for recreational trout fishing in Iowa. The stream bottom is primarily rock and gravel with frequent riffle areas.

In most years, discharge in the Sny Magill watershed is high during the spring and summer and declines during the fall and winter. High flows during the spring snowmelt period and summer storms can cause sediment discharge from Sny Magill Creek.

None of the alternatives described in this plan would affect water quality or quantity so this topic is dismissed from detailed analysis.

WETLANDS AND FLOODPLAINS

Within Effigy Mounds National Monument, the Yellow River wetlands are made up of the slow-moving river and the adjacent floodplain, several small shallow ponds, and Dousman Creek. These wetlands total about 650 acres and contain habitat for many resident and migratory birds

The North and South units of Effigy Mounds National Monument contain four ponds or ponded wetlands totaling approximately 65 acres; these are associated with active floodplains of the Yellow River and the west bank of the Mississippi River.

These ponds are located within the 100-year floodplain (NPS 1999). Founders Pond is the largest, with a surface area of 40 acres and average depth of 3 feet. The smallest pond is about 3 acres with a depth of 1 foot (Weeks 2006).

The entire Sny Magill Unit is within the 100-year and 500-year floodplains (Weeks 2006). Periodic and seasonal flooding is common, causing complete or partial inundation of the Sny Magill Unit for short periods, usually in the spring.

The Yellow River and Sny Magill drainages are influenced by the Mississippi River during high flows, when the Mississippi River backs into these drainages, reducing flow velocity of the Yellow River and Sny Magill Creek (NPS 1999). On the Yellow River, the backup occurs for about 3 miles upstream from its mouth.

The only actions proposed in the alternatives that could affect wetlands or floodplains are the construction of trails through the Heritage Addition and in the Sny Magill Unit in alternatives B and C. Until public access / development plans for these areas are prepared, it is difficult to assess the impacts (if any) that might occur. Full site-specific environmental impact analyses on wetlands and floodplains would be conducted with the development of these plans, so wetlands and floodplains are dismissed from further analysis in this general management plan and deferred to the implementation plans.

GEOLOGY

The monument lies in a geologically unique area of erosional topography drained by an intricate system of rivers and streams. Erosional forces have cut through a plain leaving high divides and precipitous bluffs above adjacent waterways. Although geologic deposits from earlier Ice Age events have been found, the last glacial period did not cover the area that is now the northeast corner of Iowa, so this eroded landform is commonly referred to as the Driftless Area. Generally speaking the Driftless Area contains both the Paleozoic Plateau and the Silurian Escarpment, which is a landform transition between the Paleozoic Plateau and the glaciated land to the west in Iowa.

None of the alternatives described in this document include actions that would disturb or destroy rock outcroppings or other geologic formations. Because there would be no potential to affect the geology of the monument or region, this topic is dismissed from further analysis.

WILDERNESS

Wilderness areas are established through congressional designation. There are no areas in the monument with such designation and it is unlikely that areas would be eligible for possible designation. Although the current management planning process was undertaken in large part because of the acquisition of the 1,045-acre Heritage Addition, an assessment of the size, configuration ,and condition of the area makes it impractical to be managed as wilderness. Therefore, this topic is dismissed from further analysis.

NIGHT SKY

NPS policy requires the park service to preserve, to the extent possible, the natural lightscapes of parks and seek to minimize the intrusion of artificial light (light pollution) into the night scene (NPS *Management Policies 2006*). The clarity of night skies is important to visitor experience and is also ecologically important. Artificial light sources, both within and outside the monument, have the potential to diminish the clarity of night skies.

The rural setting of the monument currently provides for relatively dark nights. Following NPS policy, existing outdoor lighting that is found to be contributing to nighttime light pollution would be replaced with fixtures that do not contribute to light pollution. In addition, any new outdoor lighting installed as a result of implementing any of the alternatives in this document would be the minimum necessary for safety or security and of a design that prevents stray light from spreading upwards into the sky (best lighting practices). Monument personnel would work with neighbors to decrease light pollution if a problem arises under any alternative. Given these considerations and the fact that the monument is open for day use only, the topic of night sky is dismissed from further consideration.

SOUNDSCAPES

NPS *Management Policies 2006* requires park managers to strive to preserve the natural soundscape of a park, which is defined as the lack of human-related sound and the prevalence of natural sounds. Due to the primarily undeveloped nature of Effigy Mounds National Monument, natural sounds predominate throughout most of the units. These sounds are associated with physical and biological resources such as the sounds of wind through the trees, flowing water, or birds.

Impacts on the monument's soundscapes occur from activities outside the monument. These activities include traffic on Highway 76 and trains on the tracks that run alongside the monument's eastern boundary and adjacent to the Sny Magill Unit. The planning team has learned there would be a substantial increase in the number of coal trains running alongside the monument—up to 27 additional trains per week. Another source of noise is motorized boat traffic on the Yellow River and Mississippi River.

Most noise created within monument lands occurs in the visitor center / maintenance area. However, this area is zoned as development, which allows more noise than other zones. Increased visitation, which could occur with the improved access, could increase the human-caused noise, but this increase is expected to be slight.

The alternatives would not appreciably change the distribution or number of visitors or activities in a given area and so would not affect natural soundscapes. Implementing any of the alternatives would not alter the monument's natural soundscape except on a temporary basis,

so this topic is dismissed from further analysis.

PRIME OR UNIQUE FARMLANDS

In August 1980, the Council on Environmental Quality directed that federal agencies must assess the effects of their actions on farmland soil classified by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) as prime or unique. Prime farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts.

Three of the soil units found within the boundaries of Effigy Mounds National Monument (Caneek, Lawson, and Ion silt loams) are considered by the National Resource Conservation Service to be prime farmland only if drained and protected from flooding (NRCS 2005). These soil types are in the floodplain of the Yellow River, are subject to regular flooding, and are not planned for development, so no prime or unique farmlands would be affected by any actions proposed in this plan. This topic is dismissed from further consideration.

URBAN QUALITY AND DESIGN OF THE BUILT ENVIRONMENT

Consideration of this topic is required by 40 CFR 1502.16. Urban areas and developed-area vernacular designs are not concerns in the rural area of the monument. Following NPS standard operating procedures, any new structures called for in an alternative would include rural design concepts, natural colors, and materials that do not detract from the environment. Given this mitigation, no further analysis of this topic is necessary.

INDIAN TRUST LANDS

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed action by Department of the Interior (USDI) agencies be explicitly addressed in environmental documents. No lands within Effigy Mounds National Monument are held in trust by the Secretary of the Interior solely for the benefit of American Indians due to their status as American Indians. However, recognized tribes having any implied or explicit rights to use lands or resources on the monument would continue to have these rights honored in accordance with law and NPS policy. This topic is dismissed from further analysis.

ENVIRONMENTAL JUSTICE

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency, environmental justice is the

> *fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution*

of federal, state, local, and tribal programs and policies.

The goal of "fair treatment" is not to shift risks among populations, but to identify potential disproportionately high and adverse effects and identify alternatives that may mitigate these impacts.

Clayton and Allamakee counties contain both minority and low-income populations; however, environmental justice is dismissed as an impact topic for the following reasons:

- The monument staff and planning team actively solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.
- Implementation of the preferred alternative would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect adverse effects on any minority or low-income population or community.
- The impacts associated with implementation of the preferred alternative would not disproportionately affect any minority or low-income population or community.
- Implementation of the preferred alternative would not result in any identified effect that would be specific to any minority or low-income community.
- The impacts to the socioeconomic environment resulting from implementation of any of the action alternatives would be beneficial. In addition, the monument staff and planning team do not anticipate the impacts on the socioeconomic environment to appreciably alter the physical and social structure of the nearby communities.

None of the alternatives described in this document include actions that would impact minority populations and low-income populations. Because there would be no potential to affect minority populations and low-income populations, this topic is dismissed from further analysis.

Alternatives, Including the Preferred Alternatives

2

Conical Mounds

INTRODUCTION

As noted earlier in this document, user capacity and proposed boundary adjustments must be addressed in a general management plan. Therefore, this chapter opens with these two topics, and then the elements of the management alternatives are discussed.

Management alternatives generally consist of three elements: (1) management zones that help define levels of activities and development for various areas of a park or monument; (2) actions that are common to more than one alternative; and (3) the specific actions proposed in each alternative. Thus, this chapter includes a discussion of management zones, actions common to all of the alternatives, and actions common to alternatives B and C, as well as a description of each alternative.

In addition, there is a discussion of alternatives and actions considered but dismissed, the identification of the environmentally preferred alternative, information on the costs associated with each of the alternatives, mitigative measures, and future studies and implementation plans needed.

The chapter also includes tables that summarize the key differences among the alternatives and the key differences in the impacts that are expected from implementing each alternative. (The summary of impacts table is based on the analysis in "Chapter 4: Environmental Consequences.")

USER CAPACITY

OVERVIEW

General management plans for national park system units are required by law to identify and address implementation commitments for user capacity, also known as carrying capacity. The National Park Service defines user capacity as the types and levels of visitor use that can be accommodated while sustaining the quality of park resources and visitor experiences consistent with the purposes of the park. Managing user capacity in national parks is inherently complex and depends not only on the number of visitors, but also on where the visitors go, what they do, and the "footprints" they leave behind. In managing for user capacity, the park staff and partners rely on a variety of management tools and strategies rather than relying solely on regulating the number of people in a park area. In addition, the ever-changing nature of visitor use in parks requires a deliberate and adaptive approach to user capacity management.

The foundations for making user capacity decisions in this general management plan are the purpose, significance, special mandates, and management zones associated with the park. The purpose, significance, and special mandates define why the park was established and identify the most important resources, values, and visitor opportunities that would be protected and provided. The management zones in each action alternative describe the desired resource conditions and visitor experiences, including appropriate types of activities and general use levels, for different locations throughout the park. As part of the National Park Service commitment to implement user capacity, the park staff would abide by these directives for guiding the types and levels of visitor use that would be accommodated while sustaining the quality of park resources and visitor experiences consistent with the purposes of the park. In addition to these important directives, this plan includes indicators and standards for Effigy Mounds National Monument. Indicators and standards are measureable variables that would be monitored to track changes in resource conditions and visitor experiences. The indicators and standards help the National Park Service ensure that desired conditions are being attained, supporting the fulfillment of the park's legislative and policy mandates. The general management plan also identifies the types of management actions that would be taken to achieve desired conditions and related legislative and policy mandates.

Table 2 includes the indicators, standards, and potential future management strategies that would be implemented as a result of this planning effort. The planning team considered many potential issues and related indicators that would identify impacts of concern, but those described below were considered the most significant, given the importance and vulnerability of the resource or visitor experience affected by visitor use. The planning team also reviewed the experiences of other parks with similar issues to help identify meaningful indicators. Standards that represent the minimum acceptable condition for each indicator were then assigned, taking into consideration the qualitative descriptions of the desired conditions, data on existing conditions, relevant research studies, staff management experience, and scoping on public preferences.

User capacity decision making is a form of adaptive management (see figure 3) in that it is an iterative process in which management decisions are continuously informed and improved. Indicators are monitored, and adjustments are made as appropriate. As monitoring of conditions continues, managers may decide to modify or add indicators if better ways are found to measure important changes in resource and social conditions.

Information on the NPS monitoring efforts, related visitor use management actions, and any changes to the indicators and standards would be available to the public.

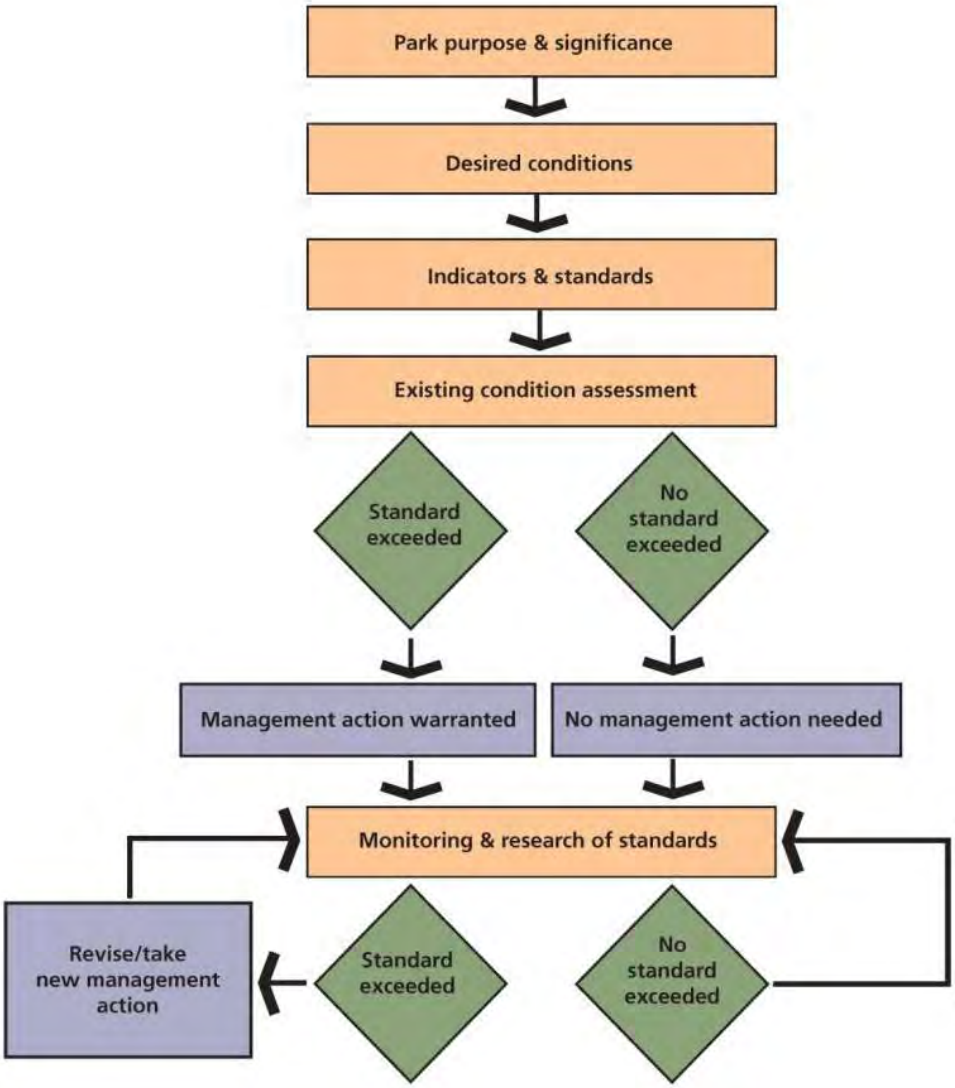


FIGURE 3. USER CAPACITY FRAMEWORK

RESOURCE AND VISITOR EXPERIENCE INDICATORS AND STANDARDS

Currently, visitor use has had few adverse effects on the resources of Effigy Mounds National Monument. If visitor numbers were to increase above the highs seen in the early 1990s, it is expected that the potential for adverse effects on natural and cultural resources would also increase. A large number of visitors at one time could also affect the visitor experience and result in resource damage.

For the life of this plan, visitation would be controlled by the number and quality of facilities, by management actions, and by cooperative local efforts and initiatives. NPS staff would monitor resources and visitor use and judge whether the standards are being exceeded in any area. It is not likely that the expected levels of visitation and types of use would cause severe impacts on the desired visitor experience or the resources.

The priority resource and visitor experience indicators for Effigy Mounds National Monument are associated with the following issues:

- Disturbance to the mounds and other archeological resources
- Visitor created trails
- Visitor caused degradation/widening of the designated trail system
- Overflow parking in paved areas due to crowding at the visitor center parking area (parking on grass would not be tolerated)

The condition of park resources are already being monitored and managed in various ways, but the indicators listed in table 2 would help the park staff track specific influences to these resources as a result of visitor use. Similar to the resource indicators, visitor opportunities and related experiences in the park are already being monitored, and the indicators listed in table 2 would help the park staff track these specific issues more systematically to ensure that desired conditions are being achieved.

Disturbance to the Mounds and Other Archeological Resources

Visitor use impacts on cultural resources include wear on historic structures and unintentional disturbances and vandalism to the mounds, archeological resources, and historic structures. Cultural resources are nonrenewable, so impacts, especially those resulting from disrespectful behavior, must be minimized to the extent possible. The park staff are already using internal guidelines to monitor cultural resources. The indicator for visitor use impacts to cultural resources is based on this existing monitoring protocol. Management efforts would be focused on maintaining the integrity and current condition of all sites, and the standard would be that visitor use impacts would not change the current condition level. Ideally, all sites would be maintained to at least “good” condition. To ensure that this standard is maintained, visitor education and enforcement of park regulations would be continued, and closure of particularly vulnerable areas would be considered. Other possibilities include developing new opportunities for active or passive interpretation of sites, including education about staying on trails and not walking on the mounds. Opportunities for site stewardship programs with volunteers and other organization could also help with education about and preservation of cultural resources. If necessary, additional signs and barriers could be erected to better protect resources.

Degradation or Widening of the Designated Trail System and Visitor Created Trails

Currently, hiking trails provide access to several areas with concentrations of preserved mounds. Visitors can also experience a unique variety of habitats, including upland forest, prairie, and wetlands. For those wanting a more in-depth experience, the monument offers 14 miles of challenging hiking trails that crisscross the monument. The monument's trail system is an important resource for facilitating visitor experience and directing visitor use, thereby protecting resources. Currently, the majority of the designated trails are in good condition with only minimal incidences of widening and erosion as a result of visitor use. Although degrading trail conditions is not currently an issue at the monument, it was identified as an important indicator because impacts to trails can affect both resources as well as the quality of the visitor experience. Trail widening was identified as the most likely impact of concern at the monument. The indicator for this issue involves tracking the incidences of visitor created problem areas (excessive widening) along segments of the trail system. The standard would vary depending on the zone, with the most conservative threshold in the backcountry zone to provide the highest level of resource protection. If designated trails exceed standards, park staff would consider more substantial trail maintenance. Increased visitor education about staying on trails and park regulations would also be used as a tool for maintaining standards. Other management actions considered include trail realignment or reconstruction, installing temporary or permanent signs, area closures, and reductions in group size or use levels where appropriate.

In addition to assessing conditions of designated trails, park staff is concerned about visitors leaving designated trails during their hikes, causing potential impacts to both natural and cultural resources. Although the proliferation of visitor created trails is not currently a problem at Effigy Mounds National Monument, future expansion of informal trails was still considered a high priority issue given the related impacts of vegetation loss, soil erosion, fragmentation of wildlife habitats, and disturbance to rare flora, fauna, and archeological sites (Marion 2008). The indicator for visitor created trails is based on a modified version of a trail condition classification system developed by Jeff Marion of the U.S. Geological Survey (USGS) (Marion 2008). Because the mounds are the park's primary resource, there is no tolerance for visitor created trails in these areas. In less sensitive areas of the monument, the standard was less stringent, but would still be aimed at minimizing the growth of informal trails, with no more than a 5% increase above the 2010 baseline. Some of the existing management activities the National Park Service has been employing in relation to this issue include educating visitors to stay on trails and clearly marking designated trails. Further, the National Park Service has placed barriers and actively restored visitor created trails to minimize their continued use. Roving patrols and other education and enforcement techniques have also been used. Other actions considered include increased enforcement or presence of rangers or volunteers, area closures, and reduced use levels.

Overflow Parking in the Grass due to Crowding at the Visitor Center Parking Area

Parking in the grass near the visitor center has been a commonplace practice over the years when the visitor center parking lot reached its capacity. However, recent studies and geophysical investigations have revealed that there are existing mounds and mound remnants in some of these areas. Although overflow parking usually occurs only during peak seasons or special

events, increased restrictions on the locations for overflow parking would be established based on this new data. Once these new restrictions are in place, both protection rangers and interpretive rangers would be tasked with monitoring any violations of unauthorized parking. There would be no tolerance for parking in the grassy areas to ensure that mound remnants are not further impacted by this activity. There would be a low tolerance for parking in unauthorized paved areas (no more than four per year). Possible management actions include additional signage and education about peak times, education about mound remnants and their preservation, better demarcation for parking, access by shuttle, and increased enforcement.

LONG-TERM MONITORING

The park staff would continue monitoring use levels and patterns throughout the park. In addition, the park staff would monitor these user capacity indicators. The rigor of monitoring the indicators (e.g., frequency of monitoring cycles, amount of geographic area monitored) may vary considerably depending on how close existing conditions are to the standards. If the existing conditions are far from exceeding the standard, the rigor of monitoring might be less than if the existing conditions are close to or trending towards the standard.

Initial monitoring of the indicators would determine if the indicators are accurately measuring the conditions of concern and if the standards truly represent the minimally acceptable condition of the indicator. Park staff might decide to modify the indicators or standards and revise the monitoring program if better ways are found to measure changes caused by visitor use. Most of these types of changes should be made within the first several years of initiating monitoring. After this initial testing period, adjustments would be less likely to occur. Finally, if use levels and patterns change appreciably, the park staff might need to identify new indicators to ensure that desired conditions are achieved and maintained. This iterative learning and refining process, a form of adaptive management, is a strength of the NPS user capacity management program.

TABLE 2: USER CAPACITY INDICATORS AND STANDARDS

General Visitor Impact Topic	Indicator	Standard	Potential Management Strategies
Visitor impacts to archeological resources and cultural landscapes	Documented changes in condition of cultural resources from visitor caused threats and disturbances, as defined in NPS Archeological Site Management Information System and List of Classified Structures (defined as good, fair, poor, or destroyed). Look at characteristics such as ▪ visitor-caused degradation or visitor-caused increase in natural wear ▪ deliberate and unintentional vandalism or theft ▪ use of unauthorized areas/sites	Visitor impacts do not exceed threshold of changing overall site condition to a lesser condition (i.e., good to fair, fair to poor, etc.) with emphasis on maintaining sites in good condition Visitor impacts do not threaten character defining features	▪ Develop new opportunities for active or passive interpretation of sites that include education about staying on trails and park regulations (e.g., not walking on the mounds) ▪ Develop site stewardship programs with volunteers and organizations ▪ Partner with other historic preservation and friends groups to create awareness about archeological and historic sites and public archeology programs ▪ Mitigate/take corrective action consistent with Secretary of the Interior standards ▪ Restrict visitor activity at designated areas ▪ Add signs and/or barriers to better protect resources ▪ Increase law enforcement ▪ Establish site/area closures
Visitor created trails (could be focused along the river and/or in other areas)	Number of visitor created trails on switchback or mound areas Total number of class 2 or above trails that leave designated trails	No tolerance (No new trails on switchback or mound areas) No more than a 5% increase above current baseline	▪ Increase in visitor education on staying on trails and park regulations ▪ Place border logs or other barriers along formal trails at the junction with informal trails ▪ Restore visitor created trails; add formal trailhead signs explaining the problem and asking visitors to remain on formal trails ▪ Enhance marking of the official trail and/or improve adjacent designated trails ▪ Increase enforcement or presence of rangers or volunteers ▪ Area closures ▪ Reduce use levels

TABLE 2: USER CAPACITY INDICATORS AND STANDARDS

General Visitor Impact Topic	Indicator	Standard	Potential Management Strategies
Condition of designated trail system	Number of linear feet where the trail has expanded 1–3 feet wider than adjacent, more typical, sections of the trail per mile	No more than 500 linear feet per mile of trail exceeding the normal width in any zone	▪ Consider more substantial trail maintenance ▪ Increase in visitor education about staying on trails and park regulations ▪ Enhance marking of the official trail and/or further improve designated trails ▪ Consider trail realignment and/or reconstruction ▪ Install temporary or permanent signs ▪ Area closures ▪ Reduce group sizes and/or use levels
Crowding at visitor center parking lot	Number of days with vehicles parked in unauthorized paved areas per year Number of days with vehicles parked in grassy areas per year	No more than 4 days per year No vehicles would be tolerated in unpaved (grassy) areas at any time	▪ Trip planning/education about off-peak times / additional signage ▪ Education about new findings of mound remnants in grassy areas of the park and why it is important to stay in designated parking areas ▪ Better demarcation (e.g., signage, barriers, and education) of area closures of sensitive areas ▪ Access by shuttle ▪ Increased enforcement ▪ Protection and interpretive rangers would be tasked with collecting data for vehicles parked in unauthorized areas

Trail Classification System

Class 0: Trail barely distinguishable; no or minimal disturbance of vegetation and/or organic litter.
Class 1: Trail distinguishable; slight loss of vegetation cover and/or minimal disturbance of organic litter.
Class 2: Trail obvious; vegetation cover lost and/or organic litter pulverized in primary use areas.
Class 3: Vegetation cover lost and/or organic litter pulverized within the center of the tread, some bare soil exposed.
Class 4: Nearly complete or total loss of vegetation cover and organic litter within the tread, bare soil widespread.
Class 5: Soil erosion obvious, as indicated by exposed roots and rocks and/or gullying.

PROPOSED CHANGES TO LEGISLATED BOUNDARY (NON-NPS LAND)

Public Law 106-323 adjusted the monument's boundary to include both the Heritage Addition and the Riverfront Tract. The Riverfront Tract comprises approximately 50 acres of bottomland in a narrow strip between the Mississippi River and the monument's North Unit boundary (see North Unit maps). The state of Iowa owns about 30 acres and the Canadian Pacific Railroad owns about 20 acres of this tract. Two archeological sites are located on the tract. These sites represent moundbuilder village habitation, an important aspect of the moundbuilding cultures that is not already included in the monument. The remains of a historic settlement are included at Red House Landing.

While the Riverfront Tract is in the legislated monument boundary, it currently remains in ownership of the Iowa Department of Natural Resources and the Canadian Pacific Railroad. Authorization to acquire this tract is included in existing legislation and may occur as soon as there is a willing seller; therefore, it will not be analyzed further in this document.

RECOMMENDED BOUNDARY ADJUSTMENTS

Figure 4 shows the location of the property tracts described below.

As part of the planning process, the National Park Service must identify and evaluate boundary adjustments that may be necessary or desirable to carry out the purposes of the national monument. The Land and Water Conservation Fund Act of 1965 provides for boundary adjustments that fall into three categories: (1) technical revisions; (2) minor revisions based on statutorily defined criteria; and (3) revisions to include adjacent real property acquired by donation, purchased with donated funds, transferred from any other federal agency, or obtained by exchange.

Otherwise, the boundary of a national park may be modified only when authorized by law. Section 3.5 of the NPS *Management Policies 2006* states that the National Park Service may recommend potential boundary adjustments for one or more of the following reasons:

- to include and protect significant resources and values or to enhance opportunities for public enjoyment related to monument purpose
- to address operational and management issues
- to protect resources critical to fulfilling the monument's purpose

National Park Service policies further instruct that any recommendations to expand a park unit's boundaries be preceded by a determination that the added lands would be (1) feasible to administer considering size, configuration, ownership, cost, and other factors; and (2) that other alternatives for management and resources protection are not adequate.

During the course of the planning process, several land parcels were identified as potential additions to Effigy Mounds National Monument under alternatives B and C. The following is a review of the policy criteria for boundary adjustments as applied to these properties. However, any acquisition would be only from willing sellers.

Before any of these boundary adjustments are made, an approved survey of the

monument's boundaries needs to be completed. It is the goal of the National Park Service to acquire needed lands or interests in lands through cooperative negotiation processes with willing sellers. Some of the lands described here would best be protected through ownership by the National Park Service; others could better be protected through the purchase of interests in the land, such as easements, or through other agreements. The best mechanism of protection would be determined in conversation with willing sellers and is not discussed here. Some adjustments of the monument's boundary would require legislative authorization from Congress.

Tract 1

This tract is adjacent to the part of the South Unit, which preserves the Marching Bear Mound Group. It is an approximately 20-acre parcel of agricultural land currently in row crops and hay rotation.

Reason for recommending this boundary adjustment. Inclusion of this tract in the monument's boundary is necessary in order to protect significant resources and values and to enhance opportunities for public enjoyment related to monument purpose.

Tract 1 lies within approximately 20 feet of the Marching Bear Mound Group. Development of this tract would threaten this fundamental park resource. Residential development of farming land is a recent trend in the area. In 2006, Allamakee County, where the park visitor center is located, issued 1.7 building permits per 10 square miles—a rate more than 50% higher than that of neighboring rural counties. Park employees have observed that much of this development is for second homes or vacation homes concentrated at the edges of public lands. Tract 1 is one mile south of the Allamakee County line on a piece of land that would be attractive for this type of development for three reasons: (1) it has a ridge-top location; (2) there is direct access to a highway; and (3) there is a lack of zoning prohibitions. Development of this type would risk harm to the Marching Bear Mound Group.

Determination that this tract meets boundary change criteria. Tract 1 would be feasible to administer because it is small in size and it borders the monument. Additionally, there are no structures on this property to maintain and no known presence of hazardous materials. Because of the risk of development if this tract remains unprotected and in private ownership, alternatives to including this tract in the monument's boundary would not be adequate for management and resource protection.

Tract 2

Tract 2 is an approximately 120-acre parcel mostly on the sides and top of a bluff over the Yellow River. The tract consists of a mixture of open pasture, fields, and steep wooded slopes and has been used for farming and logging. In a narrow area between wetlands and bluffs on the west side of Founders Pond, a county road weaves in and out of the current park boundary and tract 2.[3]

Reason for recommending this boundary adjustment. Including this tract in the boundary is necessary in order to protect significant resources and values and to enhance opportunities for public enjoyment related to monument purpose.

The adjacent part of the monument is included in the backcountry zone in alternatives B and C where cultural resources are preserved in place in good condition and natural resources are managed to be preserved or be restored to

[3] Throughout this document, this road is referred to as "county road."

an approximate appearance of the landscape associated with the moundbuilding era. Under alternatives B and C, the monument would pursue hiking access, county relinquishment, or abandonment of the county road.

If tract 2 is developed, which is a potential future use for the same reasons cited in the discussion of tract 1, it would be difficult for the park to achieve these desired conditions in the adjoining, narrow part of the monument.

Determination that this tract meets boundary adjustment criteria. This tract would be feasible to administer because it is adjacent to and, in places, almost completely surrounded by the monument. Roughly 80 acres of this tract are surrounded on three sides by the monument, while the remainder of the tract adjoins the park on two sides. There are no structures on this property and no known hazardous substances. Other alternatives for management and resource protection are not adequate for two reasons: (1) this tract is attractive for possible future development; and, (2) without this tract in the boundary, the monument would not be able to reuse the entire county road as trail. Instead, it would be necessary to accommodate visitor access by constructing a new section of trail to bypass the county road through this tract. New trail construction in this area would entail not only substantial cost, but also likely impacts to the wetlands.

Tract 3

Tract 3 includes approximately 120 acres of land south and west of the monument. The tract consists mostly of steep wooded slopes punctuated by the valley formed by Dousman Creek and is mostly used for production forestry (logging). A county road weaves in and out of the current park boundary and this tract.

Reason for recommending this boundary adjustment. Including this tract in the boundary is necessary in order to protect significant resources and values and to enhance opportunities for public enjoyment related to monument purpose. The part of the monument adjacent to this tract is zoned to protect the natural setting of the mounds and the ability of visitors to experience them in this setting. If tract 3 continues to be used for commercial forestry and/or is developed, it would be difficult for the park to achieve desired conditions in the adjacent part of the monument. Without this tract in the monument's boundary, it would also be challenging to prevent degradation in the quality of Dousman Creek, which is a tributary to the Yellow River and a rare native trout stream. Commercial forestry activities upstream have the potential to increase surface runoff and sedimentation in the stream.

Determination that this tract meets boundary adjustment criteria. This tract would be feasible to administer because it is almost completely surrounded by the monument. It consists of an approximately 80-acre section surrounded on three sides by the monument and an adjoining approximately 40-acre section that is also surrounded by the monument on three sides. Additionally, there are no structures on this property and no known hazardous substances. Other alternatives for management and resource protection are not adequate for three reasons: (1) much of this tract is attractive for possible future development; (2) continued use of this tract for logging would risk harm both to visitor experience and to Dousman Creek; and, (3) without this tract in the boundary, the monument would not be able to reuse the entire county road as trail. Instead, it would be necessary to accommodate visitor access by constructing a new section of trail to bypass the county road through this tract. New trail construction in this area would entail not only substantial cost, but also likely impacts to the wetlands.

Tract 4

This tract is an approximately 30-acre tract just west of the railroad corridor between the western border of the Sny Magill Unit and Highway X56. This field is used for agricultural purposes, but most of it is seasonally flooded, which results in reduced crop yields.

Reason for recommending this boundary adjustment. Adjusting the boundary to include this property would address operational and management issues. Alternatives B and C in the general management plan envision this property to house a small visitor contact station and possibly parking for visitors in high profile vehicles that cannot currently access the Sny Magill Unit given the low overhead railroad underpass. Because trail access from this visitor station to the mounds at Sny Magill would be provided, including this tract in the boundary would also enhance opportunities for public enjoyment related to park purpose.

Determination that this tract meets boundary change criteria. This property is absent of structures. There are no known hazardous substances on the property nor are there any known cultural resources; this makes it appropriate for consideration for new development. This property would be in the development zone if included in the boundary and it would be feasible to manage as such. There are no other adequate alternatives for management and resource protection. A visitor contact station cannot be built within the existing boundary because the low railroad trestle would not allow for passage of construction equipment. Additionally, the Sny Magill Unit is at a lower elevation than tract 4 and is entirely within the floodplain, another factor, which would make construction of a visitor contact station within the existing boundary problematic. Tract 4 is at risk for development for industrial use. A quarrying operation directly across Highway X56 from this tract has begun to spill over onto it (for example, it has been used as a storage and staging area for the quarry). To provide an appropriate, safe setting for the visitor contact station and trail to the Sny Magill mounds, it is necessary to include a tract large enough to separate the experience of visitors from this type of industrial activity.

BOUNDARY ADJUSTMENTS CONSIDERED BUT NOT INCLUDED IN RECOMMENDATIONS

Railroad Corridor

Adjusting the boundary to include the railroad corridor that forms the western edge of the Sny Magill Unit would enhance opportunities for public enjoyment related to park purposes. Currently, the sound of the trains passing close to the resources compromises the desired condition for most of the Sny Magill Unit, which is a contemplative experience for visitors with primarily natural soundscapes.

It would not be feasible for the National Park Service to manage this corridor in its boundaries while it is still actively used by the railroad. However, should the Canadian Pacific Railroad decide to move this portion of their tracks away from the monument, this corridor would be recommended for inclusion in the boundary. In the event that this railroad corridor becomes available for other purposes and is sold privately, a particularly problematic situation could result in which it would be impossible to access the Sny Magill mounds by road without crossing private property. Therefore, under a change in ownership scenario, excluding this corridor from the monument's boundary would not be an adequate alternative for management and resource protection.

Other Tracts

Five other privately held tracts that meet the criteria for boundary adjustments were also considered for addition to the monument as part of this planning effort, but are not included here. While including these five tracts in the boundary would have allowed the monument to protect significant resources and values, enhance opportunities for public enjoyment, and better address operational and management issues, these tracts are not recommended for inclusion out of respect for concerns expressed by the landowners.

NOTES:
*The park is in the process of completing a boundary survey. The boundary shown on this map is for illustrative purposes only.

HERITAGE ADDITION

NORTH UNIT

SOUTH UNIT

Smokey Hollow Road

County Road (Restricted Use)

Yellow River

Dousman Creek

Founders Pond

Mississippi River

IOWA

WISCONSIN

76

Tract 1

Tract 2

Tract 2

Tract 3

Tract 3

Pleasant Ridge Road

0 0.5 1 Miles

SNY MAGILL UNIT

Johnsons Slough

X56

Tract 4

Sny Magill Creek

Entrance Road

0 0.25 0.5 Miles

Legend

- Public Road
- County Road
- State Boundary
- Tract Proposal
- Waterbody
- National Monument Boundary
- Non-NPS Land within Park Boundary

Figure 4: Recommended Boundary Adjustments

EFFIGY MOUNDS NATIONAL MONUMENT

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

DSC/March 2012

DEVELOPMENT OF THE ALTERNATIVES

The primary building blocks for creating a framework for consistent and defensible management for a national park system unit are the management zones and the alternatives. All are developed within the scope of the unit's purpose, significance, fundamental resources and values, mandates, and legislation.

Management zones define specific resource conditions and visitor experiences to be achieved and maintained in each particular area of Effigy Mounds National Monument. Each zone description includes the types of activities and facilities appropriate to support the desired conditions. Because the zoning schemes were developed as a result of this planning effort, they are not applied to the no-action alternative (alternative A). Three management zones have been identified for Effigy Mounds National Monument—backcountry zone, discovery zone, and development zone.

One of the challenges in managing resources at Effigy Mounds National Monument is that preserving the varied fundamental resources requires potentially conflicting methods. For example, to preserve the integrity of a mound, it is often necessary to remove trees growing in or adjacent to the mound because if these trees were to fall down their roots would pull up the soil, damaging the mound and exposing buried mound material. However, given the density of mounds in the monument, if all mounds were to be protected by tree removal, there would be a noticeable decrease in tree cover, which could compromise habitat for rare plants and birds as well as diminish the overall natural setting of the mounds.

The management zones for this plan are designed to address these inherent conflicts by aiming to achieve different desired conditions for resources and visitor experience in different areas of the park and by specifying which facilities and management actions would be appropriate in each area.

The management alternatives in this general management plan represent different approaches to overall monument management and use. They respond to issues raised by public, law, policy considerations, and analysis performed by the planning team. Each of the alternatives has an overall management concept and a description of how different areas of the monument would be managed (management zones).

In formulating the alternatives, the management zones were placed in different locations or configurations on a map of the park according to the overall intent (concept) of each of the alternatives. The management zones were presented to the public in *Effigy Mounds GMP Newsletter #3* and the *Draft Effigy Mounds General Management Plan / Environmental Impact Statement*. In response to internal and external comments, the alternatives were modified and presented in the *Revised Draft General Management Plan / Environmental Impact Statement*.

This *Final General Management Plan / Environmental Impact Statement* presents three alternatives, including the NPS preferred alternative, for future management of Effigy Mounds National Monument. Alternative A, the no-action alternative, presents a continuation of existing management direction and is included as a baseline for comparing the consequences of implementing each action alternative. The action alternatives are alternative B and alternative C. These

action alternatives present different ways to manage resources and visitor use and improve facilities and infrastructure at the national monument. These alternatives embody the range of what the public and the National Park Service want to see accomplished with regard to cultural resource conditions, natural resource conditions, and visitor use and experience at Effigy Mounds National Monument.

The alternatives focus on *what* resource conditions and visitor uses, experiences, and opportunities should be at Effigy Mounds National Monument rather than on details of *how* these conditions and uses or experiences should be achieved. Thus, the alternatives do not include many details on resource or visitor use management. More detailed plans or studies would be required before most conditions proposed in the alternatives could be achieved. The implementation of any alternative also depends on future funding and environmental compliance. An approved plan does not guarantee that funding to implement it would be forthcoming. The general management plan establishes a strategy that would guide day-to-day and year-to-year management of the national monument, but full implementation could take many years.

MANAGEMENT ZONES

TABLE 3. MANAGEMENT ZONES

	BACKCOUNTRY ZONE (green)	DISCOVERY ZONE (purple)	DEVELOPMENT ZONE (brown)
Purpose/Emphasis	In this zone, the emphasis would be on the protection of resources in a natural setting.	In this zone, the emphasis would be on enhancing visitor access and understanding of the mounds, while still maintaining a natural setting.	The emphasis of this zone would be to provide the facilities and amenities necessary for visitor services and monument operations.
	There would be minimal development and the visitor experience would be one of quiet and solitude.	There would be some development designed to enhance understanding, such as interpretive waysides and signs. Ranger-led activities would occur here, and visitors would be likely to see others in this zone.	Although zoned for development, the recent discovery of numerous mound remnants in the headquarters development zone make careful and thoughtful consultation with associated tribes and other parties increasingly important whenever changes or improvements to this area are contemplated. See appendix F.
	Maintenance activities would occur primarily to further resource preservation, while accommodating visitor experience as appropriate.	Maintenance activities in this zone would occur primarily to enhance visitor experience as much as possible, while preserving resources.	The primary purpose of maintenance activities in this zone would be to maintain resources and facilities in support of visitor experiences, safety, and park operations.
Desired Resource Conditions			
Cultural Resources	Burial mounds and other cultural resources would be preserved in place in good condition according to the *Secretary of Interior's Standards*.	Burial mounds and other cultural resources would be preserved in place in good condition according to the *Secretary of Interior's Standards*. Mowing on or around the mounds would be done in accordance with the treatment recommendations of an approved cultural landscape report.	Where present in this zone, cultural resources would be protected and monitored according to the *Secretary of Interior's Standards.*

TABLE 3. MANAGEMENT ZONES

	BACKCOUNTRY ZONE (green)	DISCOVERY ZONE (purple)	DEVELOPMENT ZONE (brown)
Natural Resources	Natural resources would be managed to preserve or restore the approximate appearance of the landscape associated with the moundbuilding era (to be identified in the cultural landscape report) and to preserve rare habitat.	Natural resources in this zone would be managed to allow for visitor access and to approximate the appearance of the landscape associated with the moundbuilding era (to be identified in the cultural landscape report).	Natural resources would be modified when necessary for visitor use or monument operations.
Desired Visitor Experience			
	This zone would be experienced primarily by hiking or paddling via self-guided or ranger-led trips.	This zone would be experienced primarily by hiking or paddling via self-guided or ranger-led trips.	This zone would offer the primary orientation to the park. Information and interpretation would be offered in an indoor setting.
	On-site information and interpretation would be limited within the zone.	On-site information and interpretation would be available at many sites in this zone.	
	The visitor experience would be relatively quiet and contemplative. Encounters with other visitors and monument staff would be rare.	Encounters with other visitors and monument staff would be expected in this zone.	Special events for large crowds could be accommodated here. Many encounters with other visitors and monument staff would be expected.
	To fully experience this zone, a higher level of preparation would be necessary and a greater time commitment than in the other zones (1–4 hours) would be needed.	A moderate time commitment and physical ability would be necessary to experience this zone.	All visitors, regardless of time allowance and physical ability, could experience this zone. Visitors could gain some understanding of the park with a 30- to 60- minute time commitment.
Appropriate Facilities and Monument Operation Practices			
Facilities	Trails: Simple, minimally developed foot trails; over time, trails in this zone would be 2 to 3 feet in width with some naturally occurring obstacles. The trails would generally have a natural dirt surface, unless preservation needs require	Trails: Foot trails in this zone would be moderately developed; over time, trails in this zone would be 3 to 6 feet in width. Natural surface materials would be used to maintain the trail tread; examples include woodchips, compacted	Unless future studies demonstrate unacceptable harm occurring to recently discovered mound remnants in this area, this zone would have the visitor center, research and educational facilities, administrative offices,

TABLE 3. MANAGEMENT ZONES

	BACKCOUNTRY ZONE (green)	DISCOVERY ZONE (purple)	DEVELOPMENT ZONE (brown)
Facilities, continued	the use of surface materials for resource protection. Drainage features would be designed to blend with the natural environment. The one exception to the trail standards (above) is the South Unit trail to the Marching Bear Mound Group. This trail would continue to accommodate occasional use (not to exceed two vehicle trips a week) by small park vehicles. There would be no additional raised boardwalk trails. Roads: Maintenance roads in the backcountry zone would be limited. The maintenance road in the North Unit (that supports maintenance of the discovery zone) would be used on an occasional basis by park staff, not to exceed three trips per week. The North Unit maintenance road would have a natural dirt surface and would not exceed 10 feet in width. The northern maintenance road in the North Unit would be abandoned. Other Facilities: Other facilities in this zone would include small rustic benches, and limited, unobtrusive informational signs.	crushed stone, and dirt. Drainage features would be designed to blend with the natural environment. There would be no additional raised boardwalk trails. Roads: Maintenance roads in the discovery zone would be acceptable. If possible without disturbing resources, some trails would be constructed or rebuilt to accommodate occasional use by small park vehicles and could be accessed by people with mobility impairments. Other Facilities: Other facilities in this zone would include benches, interpretive waysides, and amenities such as trash/recycling receptacles.	maintenance facilities, trailheads, primary indoor and outdoor interpretive exhibits, museum collections storage and management space, parking lot, surfaced trails, developed outdoor program area, and accessible facilities.
Practices for maintenance/operations and resource management	Park staff and volunteers would maintain resources and facilities in this zone with an emphasis on preserving resource integrity.	Park staff and volunteers would maintain resources and facilities in this zone with an emphasis on the support of visitor experience and safety to the extent possible without compromising resource integrity.	Park staff and volunteers would maintain resources and facilities in this zone with an emphasis on the support of visitor experience, safety, and park operations.

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The development and identification of a preferred alternative involves evaluating the alternatives with the use of an objective analysis process called "choosing by advantages" or "CBA." Through this process, the planning team identified and compared the relative advantages of each alternative according to a set of factors. The advantages of each alternative were compared for each of the following CBA factors:

Factor 1—Improve Cultural Resource Management

Factor 2—Improve Natural Resource Conditions

Factor 3—Improve Information, Education, and Access (Visitor Experience)

Factor 4—Improve operational efficiency and effectiveness

The relationships between the advantages and costs of each alternative were compared to determine which would provide the greatest overall benefits for the most reasonable cost.

Alternatives B and C are similar in a number of areas. They both include a research center (a virtual center in alternative B and an off-site center in alternative C), which would contribute to factors 1 and 3. It was determined after the CBA workshop that the research center would be virtual in alternative B and off-site in alternative C; however, this difference does not change the contributions to factors 1 and 3. They both include the addition of a small contact center at the Sny Magill Unit, which would also contribute to factor 3. They also would result in a reduction of aging assets (three housing units), which would contribute to factor 4.

However, in alternative B, the majority of the North and South units would be in the backcountry zone, while in alternative C, the majority of the North and South units would be in the discovery zone. Because of this difference, Alternative B has a slightly higher score for factor 2. Because the trails would be slightly less developed in the backcountry zone and signs and waysides would be more restricted, alternative B, with its larger backcountry area, would be slightly better at improving the natural resource conditions. Implementing the features of the backcountry zone on larger portions of the monument would also improve the protection of the cultural landscape, adding slightly to factor 1. Trail development and maintenance in the backcountry zone would be minimal, adding to factor 4.

Therefore, using the CBA process, alternative B was identified as the preferred alternative.

In consultation with traditionally associated tribes after the selection of the preferred alternative, it was noted that alternative C may have a greater contribution to factor 3 as a result of the inclusion of a physical research center, the proximity of the museum collections, and the zoning that would allow for more access and interaction. While these are important points that were not part of the CBA workshop, they do not change the overall selection of the preferred alternative.

ELEMENTS COMMON TO ALL OF THE ALTERNATIVES (ALTERNATIVES A, B, AND C)

The following actions would be implemented regardless of which alternative is approved. The actions described here should be considered in addition to the actions described specifically for each alternative.

RESOURCE MANAGEMENT

- The mounds would be preserved in place.
- Archeological survey and evaluations and a cultural landscape report would be completed for the entire monument.
- National Register of Historic Places nomination forms would be updated to include descriptions of all eligible (contributing) resources not presently described and to incorporate new scientific information.
- When feasible, the resources of the monument would be managed for a landscape that emulates that which existed during the time of the moundbuilding era to be identified in the cultural landscape report. The sensitive cultural and natural resources would be preserved using the natural processes that sustained the moundbuilders and protected their heritage through time, combined with the appropriate management practices to conserve them for the future.
- Cooperative management strategies with stakeholders for resource protection and preservation would be developed.
- Archeological evaluations of sites could include noninvasive geophysical investigations of mounds and limited archeological testing of nonmound areas of cultural sites.
- While natural resources and processes would be preserved or restored to the extent possible, they could be managed when necessary to restore landscapes or preserve fundamental cultural resources.
- Ongoing ecosystem restoration efforts and nonnative species management would continue.
- The monument staff would complete a resource stewardship strategy that includes an ecosystem restoration strategy, nonnative species management, and a fire management plan.
- Riverbanks in the Sny Magill Unit would be stabilized from erosion and selected trees may be removed from the mound group and adjacent area.

VISITOR USE

- Safety messages would be prominent in communications to the public.
- Interpretation would emphasize the sacred nature of the mounds and resources, and would consider the cultural resources (mounds) as symbols of the values, beliefs, and accomplishments of the moundbuilders.
- The National Park Service would explore partnership possibilities with appropriate groups to offer interpretive canoe trips.

- Frequent special events would take place in developed areas.
- Wetland habitat interpretive programs would be offered as accessible opportunities for all visitors.

MONUMENT MANAGEMENT

- An approved boundary survey would be completed to resolve land issues.
- Treatment of unused logging roads would be dictated by the completed cultural landscape report.
- Maintenance facilities and functions would stay where they are while actively adapting to the changing needs of resource and facility requirements.
- Radon, which has been found in the basement of the headquarters building, would be mitigated.
- The recently remodeled former park housing units would continue to be used as office space for park employees.
- If new information reveals that repairing or replacing existing infrastructure in the headquarters area would cause harm to archeological resources, the National Park Service would investigate ways to repair or replace that infrastructure in a nonintrusive manner, or would consider relocating facilities.
- If new information reveals that repairing or replacing existing infrastructure in the headquarters area would cause harm to archeological resources, the National Park Service would investigate ways to repair or replace that infrastructure in a nonintrusive manner, or would consider relocating facilities (see appendix F).

ALTERNATIVE A—NO ACTION

CONCEPT

Current management strategies and trends would continue under the no-action alternative. There would be no major changes to monument operations or visitor services. All cultural sites would continue to be maintained and preserved using current practices. The mounds would continue to be protected and preserved. Management treatments would vary according to the cover and condition of individual mounds. Historic sites would be protected from degradation, but not otherwise managed. The Heritage Addition would not have a long-term plan in place. The North, South, and Sny Magill units would continue to be managed as they are currently.

ZONING

There would be no zoning in this alternative. Management direction from the previous general management plan and other planning would remain in effect.

MONUMENTWIDE

- Existing trails and other facilities (benches, signs, etc.) would continue to be maintained.
- The long-range interpretation plan would be completed and would include placement information for new trail interpretive and directional signs.

HERITAGE ADDITION

- Visitors would be able to experience the landscape of the Heritage Addition from overlooks in the North and South units and through infrequent ranger-led hikes or tours.
- Visitors would receive information and interpretation through nonpersonal media at the visitor center (exhibits, printed materials, etc.) and would have opportunities to appreciate the related cultural environment in a quiet contemplative setting.
- Public access would include canoeing and infrequent ranger-led hikes.
- Motorized and nonmotorized boating would be allowed on the Yellow River. No facilities would be provided and take-out would be prohibited in the monument.

VISITOR CENTER, ADMINISTRATIVE OFFICES, AND MAINTENANCE AREA (IN THE NORTH UNIT)

- The visitor center complex would be maintained and media upgraded as needed.
- Frequent special events would take place in developed areas.
- Visitors would continue to receive formal and informal services at the visitor center; these would include educational programs, information and orientation, demonstrations, and hikes.
- Crowding of the visitor center would continue when school

groups are present, especially during inclement weather.

- The monument's museum collections and archives (items not on display in the visitor center) would remain in the basement of the visitor center.

NORTH UNIT

- This unit would continue to be managed to accommodate the most visitor use of any unit with continued emphasis on resource protection and preservation.
- Trails would continue to be maintained or improved for visitor access and safety while preserving mounds by relocating trails away from mound sites.
- Visitors would receive information and interpretation through personal services such as hikes and nonpersonal media (trailside exhibits, printed materials, etc.) and would have opportunities to appreciate the related cultural environment in a quiet contemplative setting.
- Frequent ranger-led hikes or tours connecting the tangible resources of the moundbuilders and natural features of the monument would take place only in areas that do not jeopardize those resources.
- The National Park Service would not actively seek to acquire the Riverfront Tract, which is already within the authorized boundary, unless its cultural resources are endangered in some way or the property is put up for sale.

SOUTH UNIT

- This unit would be managed to support a low level of visitor use while maintaining the primitive setting.
- Trails would be improved for visitor access and safety while preserving mounds by relocating trails away from mound sites and changing substrate from gravel to wood chip. The only new trail would connect the Yellow River bridge to the South Unit trails; existing trails could be realigned for resource protection or improved visitor experience.
- Trail signs would be upgraded; this would include a wayside at the Marching Bear Group.
- Visitors would receive information and interpretation primarily through nonpersonal media (trailside exhibits, printed materials, etc.) and have opportunities to appreciate the related cultural environment in a quiet contemplative setting.
- Visitors would be primarily on their own on existing trails with minimal contact with monument staff or other visitors. Occasional special hikes connecting the tangible resources of the moundbuilders and natural features of the monument would take place.

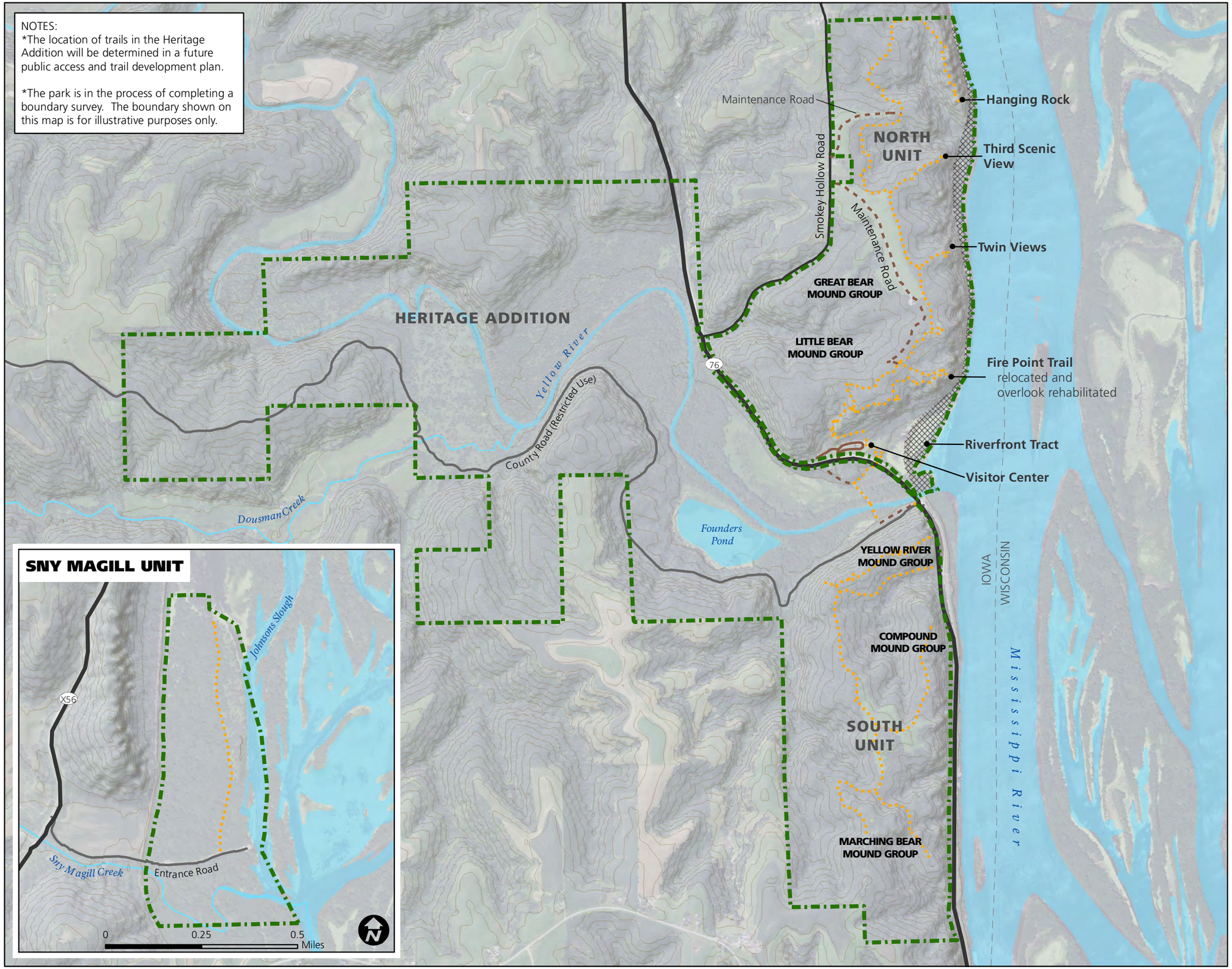
SNY MAGILL UNIT

- This unit would be primarily managed for preservation of the mounds with limited amenities for visitor use. The parking area and wood-chipped trail would continue to be maintained. There would be no other development under this alternative.

- Visitors would receive information and interpretation on this unit at the main unit visitor center, and would have opportunities to appreciate the related cultural environment in a quiet contemplative setting.
- There would continue to be very limited NPS presence in this unit due to lack of available staff.
- Visitors would be provided opportunities to experience the influence of the natural world on the moundbuilders through interpretation and personal contemplation.
- The public would continue to have access to this unit for recreational activities in appropriate areas.

Figure 5 Alternative A (No Action)

EFFIGY MOUNDS NATIONAL MONUMENT



Legend

- Contour Lines (10 m interval)
- Public Road
- County Road
- Park Road
- Maintenance Access
- Trail
- State Boundary
- Waterbody
- National Monument Boundary
- Non-NPS Land within Park Boundary

Air Photo Source: National Agricultural Imagery Program (NAIP)
Collection Year: 2010

0 0.25 0.5 Miles

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

DSC/June 2012

ELEMENTS COMMON TO BOTH ACTION ALTERNATIVES (ALTERNATIVES B AND C)

To understand alternatives B and C, the actions described here should be considered in addition to those actions described in the section entitled "Elements Common to all the Alternatives (Alternatives, A, B, and C)" and the actions specific to each of the action alternatives.

HERITAGE ADDITION

- Wild and scenic river designation for the Yellow River would be pursued.
- The National Park Service would work with Allamakee County to authorize hiking on the county road.
- Leave No Trace principles would be emphasized, including trash removal.
- Appropriate activities allowed in the unit would include quiet, low impact, resource-based activities such as hiking, canoeing, and wildlife viewing.
- Visitors would receive information and orientation at the visitor center before accessing the Heritage Addition.
- Ranger-led hikes would occur occasionally in this unit.
- River and aquatic biology educational programming could be offered utilizing the Yellow River and wetlands.
- Pass-through canoeing on the Yellow River would be allowed, but take-out would be prohibited in the monument to protect riverside resources.
- Wayside and directional sign placement (for orientation and/or interpretation) would be minimized; locations would be selected to carefully reflect the contemplative setting desired. Placement of signs would be guided by the long-range interpretation plan (see the "Future Studies and Implementation Plans Needed" section).
- Treatment of unused logging roads would be dictated by the completed cultural landscape report (see the "Future Studies and Implementation Plans Needed" section).
- The specific location of trails in the Heritage Addition would be identified in a subsequent trail development / public access plan (see the "Future Studies and Implementation Plans Needed" section). The access plan would explore and analyze potential options that require a minimum of new trail construction.

VISITOR CENTER, ADMINISTRATIVE OFFICES, AND MAINTENANCE AREA

Development Zone in the North Unit

- Exhibit, museum, and bookstore space in the visitor center would be reconfigured.
- Depth of information and interpretation content in the visitor center would increase and new technology would be used as it becomes available.

NORTH UNIT

- There would be no development of new facilities in the North Unit.
- The National Park Service would pursue acquisition of the Riverfront Tract in the legislated boundary from a willing seller to protect cultural resources on the tract and would evaluate the sites for national register or national landmark status.
- If possible without compromising resource integrity, the existing trail at Fire Point would be moved for visitor safety and resource preservation. The mound at Fire Point would be stabilized after the trail is moved. All work would be done according to Advisory Council Regulations (36 CFR Part 800), NPS *Management Policies 2006*, *NPS 28: Cultural Resources Management Guideline*, and *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*. All work would be done in consultation with the Iowa state historic preservation officer and traditionally associated American Indian tribes.

SOUTH UNIT

- Interpretation of mound preservation and the related 19th century American Indian cultural experience would be enhanced by interpreting the military trail and cistern.
- The Yellow River Bridge Trail would be connected to the existing Marching Bear Trail. The exact location of the trail would be determined through careful site planning (see the "Future Studies and Implementation Plans Needed" section). In consultation with the Iowa state historic preservation officer, Office of the State Archaeologist, and traditionally associated American Indian tribes.

SNY MAGILL UNIT

- The public would continue to have access to this unit for approved recreational activities. Boating on the Mississippi River adjacent to and within this unit would be monitored for use levels and resource impacts.
- The National Park Service would explore possible cooperative partnerships with other agencies such as the U.S. Fish and Wildlife Service to provide visitor services.
- If land between the highway and the railroad tracks is acquired from a willing seller, a visitor contact station would be developed to provide an NPS presence for resource protection and visitor services.
- A site development plan would be developed to evaluate options for location and design of the visitor contact station, access trail, and trail surface improvements (see "Future Studies and Implementation Plans Needed" section).

FUTURE ACQUISITIONS

- The National Park Service would pursue acquisition of the tracts identified "Figure 4: Recommended Boundary Adjustments" from a willing seller.
- If tract 1 is acquired it would be zoned discovery.
- If tracts 2 and 3 are acquired, they would be zoned backcountry.

- If tract 4 is acquired it would be zoned backcountry.
- While the Riverfront Tract is in the monument's authorized boundary, it is not currently owned by the National Park Service. If this tract is acquired, it would be managed in the backcountry zone.

ALTERNATIVE B (NPS PREFERRED ALTERNATIVE)

CONCEPT

Alternative B would provide enhanced natural and cultural resource protection, opportunities for increased understanding of the monument, and expanded opportunities for visitors to experience relative quiet and solitude. Due to the sensitivity and irreplaceable nature of the mounds and cultural landscape, the National Park Service would accomplish these goals with the minimum amount of development.

The desired visitor experience would be for visitors to make personal connections to the monument's tangible resources through understanding of the significance of the (pre-European contact) American Indian moundbuilding story and its relationship to the heritage of the region. The landscape and visitor facilities would support a contemplative atmosphere with opportunities for the public to spend time reflecting on the lives and legacy of the moundbuilders and the sacred nature of the site today. Education and interpretation of the natural resources of the park would be expanded.

The natural setting created by preserving or restoring landscapes would provide a connection between the moundbuilding cultures and the environment that shaped their lives and beliefs. This would be especially enhanced through the extensive backcountry zone under this alternative.

Visitor experiences throughout the monument would be primarily self-guided on a variety of trail types in a quiet, contemplative setting to maintain an atmosphere of respect toward the sacred nature of the monument.

Under this alternative, the diversity of visitor trail experiences would be expanded from that currently offered at the monument. Presently, visitors walk on trails to view mounds that have had the covering vegetation manicured so that the mounds are clearly visible. Consistent with the resource conditions and visitor experiences defined in the backcountry zone, visitors to some areas of the monument would be able to experience a walk on marked trails through natural, undeveloped landscapes and view some mounds in a more natural state (with only some woody materials removed for preservation purposes). Providing access to mounds that are in different conditions would allow an expansion of existing interpretive opportunities and an increased understanding of the monument's fundamental resources.

HERITAGE ADDITION

The Heritage Addition would be zoned for backcountry. See "Figure 6. Alternative B."

VISITOR CENTER, ADMINISTRATIVE OFFICES, AND MAINTENANCE AREA (DEVELOPMENT ZONE IN THE NORTH UNIT)

This area would be managed as part of the development zone. See "Figure 6. Alternative B."

Additional elements include the following:

- Those portions of the monument's museum collections and archives that are in long-term storage and not on display in the visitor center are very inaccessible to the public,

including researchers; they would either be (1) moved out of the basement of the visitor center to a safer, more secure location outside of the monument where they would receive better care yet remain accessible to legitimate researchers; or, (2) the current facility would be improved and staffing would be increased to more closely meet NPS museum collections standards. The National Park Service would be willing to cooperate with local universities, museums, nonprofit organizations, or government agencies to store the museum collections and archives closer to Effigy Mounds National Monument, in accordance with NPS museum collections standards. Due to concerns raised by traditionally associated tribes and other stakeholders, it may be preferable to keep the collections at Effigy Mounds National Monument. If the collections are moved, the NPS Midwest Regional Office, chief of Museum Collections and Records would oversee the move and serve as a technical advisor. All options would be carefully considered in consultation with the state historic preservation officer, Office of the State Archaeologist, and traditionally associated tribes.

NORTH UNIT

The area immediately north of the visitor center, including the major trail and access road, would be placed in the discovery zone. The area included in the discovery zone is designed to connect the interpretive information available at the visitor center with the on-the-ground resources.

The remainder of the North Unit would be placed in the backcountry zone, which is designed to enhance resource protection and offer visitors opportunities for solitude and thoughtful reflection. See "Figure 6. Alternative B."

Elements associated with the North Unit include the following:

- Existing trails could undergo minor realignment for resource protection purposes in the backcountry zone and for visitor experience in the discovery zone.
- The width of some existing trails and roads within the backcountry and discovery zones would be reduced according to the management zone descriptions.
- Visitors would be provided opportunities to reflect on the influence of the natural world on the moundbuilders in a primarily quiet contemplative setting. There would be limited personal services such as guided hikes and talks. On-site information would be limited in the backcountry zone.
- Interpretive waysides and signs would be primarily sited in the discovery zone. Some interpretive waysides and signs may be carefully sited in the backcountry zone to provide essential information but not detract from the natural and contemplative setting. Wayside and sign placement would be determined in the long-range interpretation plan.
- Maintenance access to the northernmost portion of the monument would be nonvehicular and the northern maintenance road would be abandoned.

SOUTH UNIT

In alternative B, the majority of the South Unit is zoned for backcountry. An area

immediately south of Highway 76 would be placed in the discovery zone. See "Figure 6. Alternative B."

The backcountry zoning is designed to enhance resource protection and offer visitors opportunities for solitude and thoughtful reflection. The area that is zoned discovery is designed to connect the interpretive information available at the visitor center with the on-the-ground resources.

Elements associated with the South Unit include the following:

- Visitors would be provided opportunities to experience the influence of the natural world on the moundbuilders through interpretation and contemplation and would receive information primarily from the visitor center and limited wayside exhibits.
- Directional signs would be added as needed to assist visitors.
- Interpretive waysides and signs would be primarily sited in the discovery zone. Some interpretive waysides and signs may be carefully sited in the backcountry zone to provide essential information but not to detract from the natural and contemplative setting. Wayside and sign placement would be determined in the long-range interpretation plan.
- In this alternative, the majority of the existing trails would be in the backcountry zone.
- The width of some existing trails and roads within the backcountry and discovery zones would be reduced according to the management zone descriptions.
- Visitors would be primarily on their own in the backcountry zone and have minimal contact with monument staff or other visitors.
- Existing trails could be realigned for resource preservation purposes in the backcountry zone and for visitor experience purposes in the discovery zone.

SNY MAGILL UNIT

In alternative B, the majority of the Sny Magill Unit is zoned for backcountry. A small portion of the unit that contains an improved trail is zoned for discovery. See "Figure 6. Alternative B."

Elements associated with the Sny Magill Unit include the following:

- Depending upon the time of year, visitors would receive formal and informal personal services at the contact station such as NPS-conducted educational programs; conducted interpretive demonstrations, talks, and walks; and additional contact with rangers.
- Access to the Sny Magill Unit would be improved from current conditions under this alternative. A trail would be built from the parking area only to the first mounds encountered (a distance of approximately 412 yards).

VIRTUAL RESEARCH CENTER

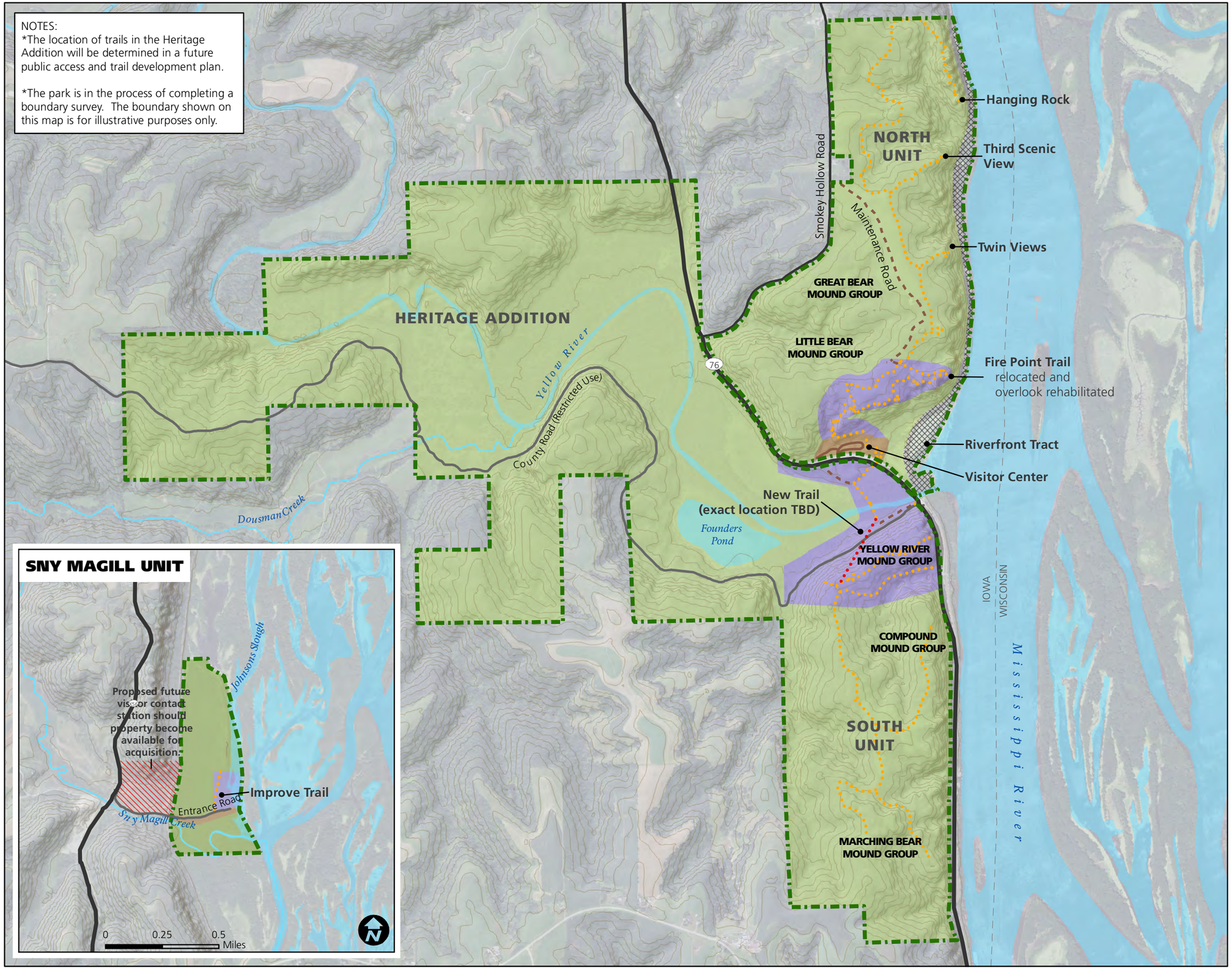
In alternative B, a virtual research center would be developed to serve as an online portal for information exchange on mound research and management in the region. The virtual research center would be developed and managed by monument staff, in partnership with tribal governments, other land management agencies, and academic institutions.

Figure 6
Alternative B

EFFIGY MOUNDS NATIONAL MONUMENT

NOTES:
*The location of trails in the Heritage Addition will be determined in a future public access and trail development plan.

*The park is in the process of completing a boundary survey. The boundary shown on this map is for illustrative purposes only.



Legend

- Contour Lines (10 m interval)
- Public Road
- County Road
- Park Road
- Maintenance Access
- Trail
- State Boundary
- Waterbody
- National Monument Boundary
- Non-NPS Land within Park Boundary

Alternative Management Zones

- Backcountry Zone
- Developed Zone
- Discovery Zone

Air Photo Source: National Agricultural Imagery Program (NAIP)
Collection Year: 2010

0 0.25 0.5 Miles

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DSC/June 2012

ALTERNATIVE C

CONCEPT

Alternative C would provide enhanced and expanded opportunities for visitors to experience the monument and increase their understanding of the moundbuilders while protecting and preserving natural and cultural resources.

The desired visitor experience would be for visitors to make personal connections to the monument's tangible resources through understanding of the significance of the (pre-European contact) American Indian moundbuilding story and its relationship to the heritage of the region. As a means of enhancing the visitor experience, public access to various units of the monument would be improved in this alternative.

The landscape and visitor facilities would provide opportunities for the public to learn about the lives and legacy of the moundbuilders and the sacred nature of the site today. The natural setting created by preserving or restoring landscapes would provide a connection between the moundbuilding cultures and the environment that shaped the moundbuilders lives and beliefs.

Visitor experiences throughout the monument would be on developed trails that allow visitors to learn about the mounds and their makers. Because more of the monument would be in the discovery zone in this alternative, visitors would be likely to encounter other visitors or park staff during their visit.

HERITAGE ADDITION

The Heritage Addition would be zoned as backcountry, see "Figure 7. Alternative C."

VISITOR CENTER, ADMINISTRATIVE OFFICES, AND MAINTENANCE AREA (DEVELOPMENT ZONE IN THE NORTH UNIT)

This area would be managed as part of the development zone. See "Figure 7. Alternative C."

Additional elements include the following:

- Those portions of the monument's museum collections and archives that are in long-term storage and not on display in the visitor center are very inaccessible to the public, including researchers; they would be moved out of the basement of the visitor center to the new research center located outside of the monument in a neighboring town (within approximately 10 miles of the monument headquarters). This new location would meet NPS museum collections standards and provide a safer, more secure location, yet provide access for legitimate researchers. The NPS Midwest Regional Office, chief of Museum collections and Records would oversee the move and serve as a technical advisor.

NORTH UNIT

In alternative C, almost the entire North Unit is zoned as discovery. The discovery zoning is designed to provide improved access to the resources in the North Unit. This zoning also allows for more on-site interpretation and directional signs. See "Figure 7. Alternative C."

Additional elements include the following:

- Existing trails could undergo minor realignment for resource protection purposes.
- The width of some existing trails and roads within the discovery zone would be reduced according to the management zone description.
- Visitors would have opportunities to experience the influence of the natural world of the moundbuilders through personal services such as guided hikes and talks, and nonpersonal media (trailside exhibits, printed materials, etc.).

SOUTH UNIT

In alternative C, the majority of the South Unit would be in the discovery zone. The discovery zoning is designed to provide improved access to the resources in the South Unit. This zoning also allows for more on-site interpretation and directional signs. See "Figure 7. Alternative C."

Additional elements include the following:

- Visitors would be provided opportunities to experience the influence of the natural world on the moundbuilders through interpretation and contemplation. Visitors would receive information from the visitor center and wayside exhibits.
- Directional signs would be added as needed to assist visitors.
- Interpretive waysides and signs would be primarily sited in the discovery zone. Some interpretive waysides and signs may be carefully sited in the backcountry zone so as not to detract from the natural and contemplative setting. Wayside and sign placement would be determined in the long range interpretation plan.
- Visitors would be primarily on their own on well-developed trails, but are likely to have some contact with monument staff or other visitors.
- The width of some existing trails and roads within the backcountry and discovery zones would be reduced according to the management zone descriptions.
- In this alternative, the majority of the existing trails would be located in the discovery zone.
- Existing trails could be realigned for resource preservation purposes in the backcountry zone and for visitor experience purposes in the discovery zone.

SNY MAGILL UNIT

In alternative C, the majority of the Sny Magill Unit is zoned for backcountry. A portion of the unit that contains an improved trail is zoned discovery. See "Figure 7. Alternative C."

Elements include the following:

- The existing trail (approximately (885 yards) would be improved to provide for better visitor access and natural resource management according to a site development plan to be prepared.
- Depending on the time of year, visitors would receive formal and informal personal services at the visitor contact station such as NPS-conducted educational programs; interpretive demonstrations, talks, and walks; and additional contacts with rangers.

RESEARCH CENTER

In alternative C, a research center would be developed outside of the monument in a neighboring town. In addition to its primary use as a research center, the facility would also house the monument's museum collections and archives. The facility would have an office for the center director, a small research space, and a library for National Park Service and visiting researchers.

The research center would be located in a leased building within approximately 10 miles of the monument headquarters. The monument would also seek out partnership opportunities to lease space from other agencies that are developing compatible facilities in the nearby area.

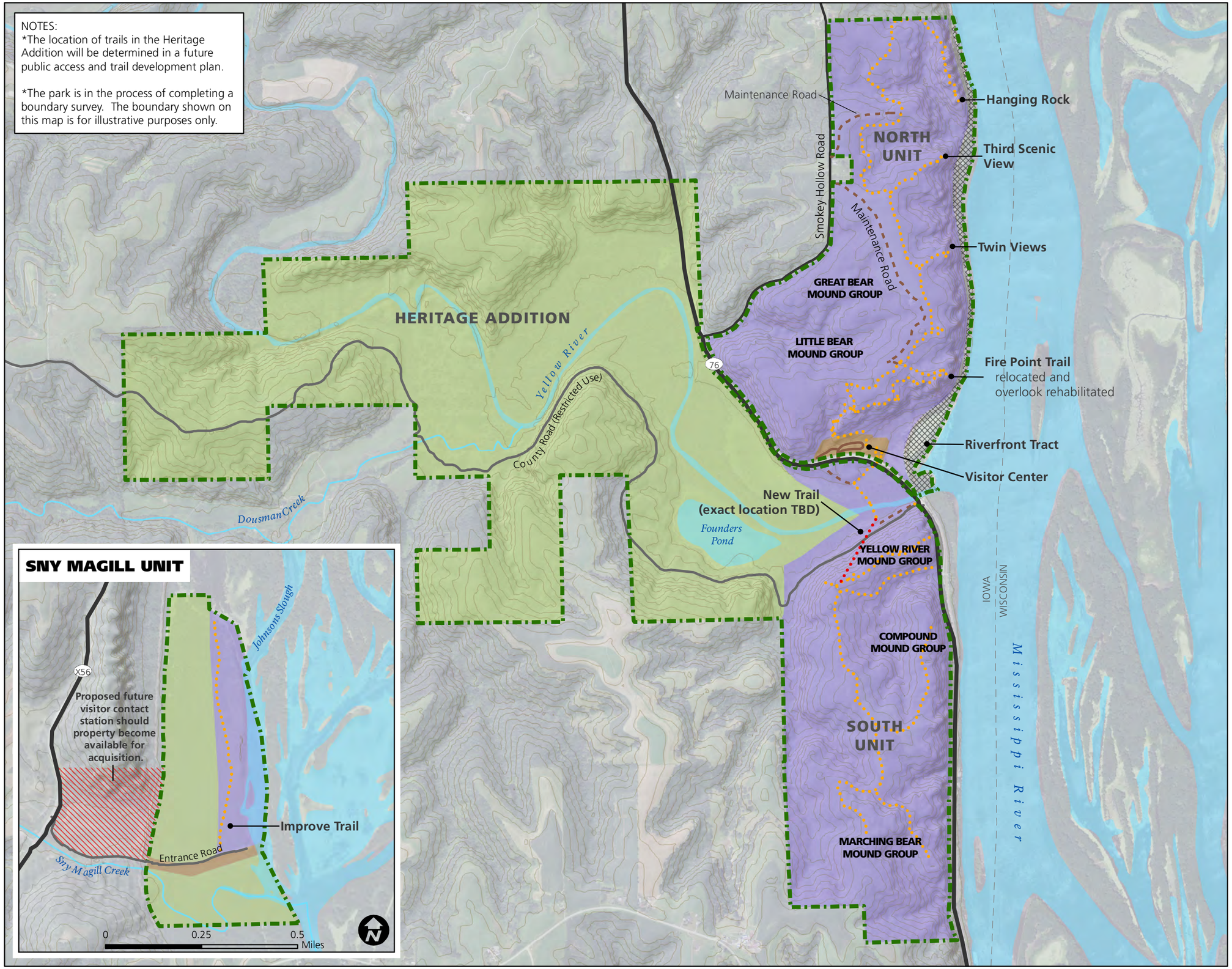
The primary goal of the center would be to promote education, preservation, and maintenance activities that would support mound stewardship throughout the four-state region. As a result of this research capacity, there would be an expanded role for maintenance and interpretation staff to work in cooperation with resource managers in employing innovative management techniques and interpretive programming.

Figure 7
Alternative C

EFFIGY MOUNDS NATIONAL MONUMENT

NOTES:
*The location of trails in the Heritage Addition will be determined in a future public access and trail development plan.

*The park is in the process of completing a boundary survey. The boundary shown on this map is for illustrative purposes only.



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Alternative Management Zones

- Backcountry Zone
- Developed Zone
- Discovery Zone

Air Photo Source: National Agricultural Imagery Program (NAIP)
Collection Year: 2010

0 0.25 0.5 Miles

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DSC/March 2012

ESTIMATED COSTS

Cost estimates in general management plans are required by the National Parks and Recreation Act of 1978 and are requested by Congress for budget control purposes.

The implementation of the approved plan, no matter which alternative, would depend on future NPS funding levels and servicewide priorities, and on partnership funds, time, and effort. The approval of a general management plan does not guarantee that funding and staffing needed to implement the plan would be forthcoming. Full implementation of the plan could be many years in the future.

The following assumptions apply to costs presented in this plan:

- These cost figures are broad estimates based on the costs of construction, supplies, and employee salaries; they should not be used for budgeting and project planning.
- The costs presented here have been developed using industry standards to the extent available.
- Actual costs would be determined at a later date, considering the design of facilities, identification of detailed resource protection needs and changing visitor expectations.
- Potential costs for land protection tools (easements, acquisitions, etc.) to implement the boundary adjustment proposals in this general management plan are not included in these estimates.
- The cost estimates presented here represent the total costs of projects. It is possible that cost sharing opportunities with partners could reduce overall costs.

The NPS Facility Planning Curatorial Space Model was consulted and research on comparable facilities was conducted to determine the space needs for a research center in alternative C. The NPS facility planning model was also run to determine the space needs for a Sny Magill visitor contact station in alternatives B and C.

ALTERNATIVE A (NO ACTION)

Costs associated with implementing this alternative include both on-going operations funding (base funding) and those items that are already funded or approved. Funded projects include construction of a trail to the South Unit and actions addressing deferred maintenance.

In addition to the above costs, periodic increases in base funding would be required to cover inflation and to remain at the current level of monument operations. The current staffing level cannot be reduced if the monument is to continue to be open 362 days a year.

ALTERNATIVE B (NPS PREFERRED ALTERNATIVE)

Cost estimates for this alternative include reconfiguration of the visitor center, a visitor contact station and trail in the Sny Magill Unit, a trail connecting the North and South units, and new trails in the Heritage Addition. Improvements to the museum exhibits and collections storage are also included. Funding needs for building maintenance and operations costs are also included in this alternative.

Nonfacility costs in this alternative would include stabilization of the mound at Fire Point, implementation of landscape restoration, other cultural and natural resource management actions, additional plans and studies, and funding for enhanced interpretation programs and materials at the main visitor center and at the Sny Magill Unit.

Five and a half additional permanent staff positions would be recommended to fully implement alternative B. The following positions would be needed: museum tech, two seasonal interpreters, two seasonal maintenance workers, law enforcement ranger, and a seasonal cultural resource specialist. This increase in staffing would be necessary to have staff available at the visitor center and seasonally at the Sny Magill Unit; to operate the virtual resource center; and to conduct needed administrative, resource management, and protection functions. The increase in staffing is also due to the inclusion of the Heritage Addition within Effigy Mounds National Monument. The Heritage Addition approximately doubled the total acreage of the monument, yet static base funding has resulted in little to no increase in staffing.

Although the cost estimates were based on using full-time NPS employees, some of the work could be done by volunteers or cooperating association employees. If it were not possible to fill the eight positions, then the Sny Magill Unit would be staffed only a few days a week or would be staffed only when visitation is high.

ALTERNATIVE C

Cost estimates for this alternative include reconfiguration of the visitor center, construction of a visitor contact station and longer trail in the Sny Magill Unit, a trail connecting the North and South units, and development of trails and access in the Heritage Addition. Improvements to the museum exhibits are also included. Funding needs for additional building maintenance, operations, and the leasing of a research center facility in a nearby town are also included in this alternative.

Nonfacility costs in this alternative would include stabilization of the mound at Fire Point, implementation of landscape restoration, other cultural and natural resource management actions, additional plans and studies, and funding for enhanced interpretation programs and materials at the main visitor center and the Sny Magill Unit.

Seven and a half additional permanent staff positions would be recommended to fully implement the alternative C. The following positions would be needed: cultural resource specialist/research center director, museum tech, two seasonal interpreters, maintenance worker, two seasonal maintenance workers, law enforcement ranger, seasonal cultural resource specialist, and an IT tech. This increase in staffing would be necessary to have staff available at the research center, visitor center, and seasonally at the Sny Magill Unit; to operate the research center; and to conduct needed administrative and resource management duties. The increase in staffing is also due to the inclusion of the Heritage Addition within Effigy Mounds National Monument. The Heritage Addition approximately doubled the total acreage of the monument, yet static base funding has resulted in little to no increase in staffing.

Although the cost estimates were based on using full-time NPS employees, some of the work could be done by volunteers or cooperating association employees. If it were not possible to fill the nine positions, then the Sny Magill Unit would be staffed only a few days a week or would be staffed only when visitation is high.

TABLE 4. ESTIMATED COSTS OF THE ALTERNATIVES (IN 2010 DOLLARS)

	Alternative A (No Action)	Alternative B (NPS Preferred)	Alternative C
Annual Operating Costs[1]	$1,200,000	$1,465,000	$1,680,000
Staffing (FTE[2])	18	22.5	25.5
One Time Costs			
Facility Costs[3]	$600,000	$2,560,000	$2,710,000
Nonfacility Costs[4]	$100,000	$250,000	$250,000
Total One Time Costs	$700,000	$2,810,000	$2,960,000

(1) Annual operating costs are the total annual costs for maintenance and operations associated with each alternative, including maintenance, utilities, supplies, staff salaries and benefits, leasing, and other materials.

(2) Total full-time equivalents (FTEs) are the number of positions required to maintain the assets of the park at a good level, provide acceptable visitor services, protect resources, and other support staff. FTE is not a measurement of the number of people, but is a measurement of "equivalency"—for instance, two part-time employees could equal one FTE. The full-time equivalent staff would not necessarily be National Park Service employees. Park managers would explore opportunities to work with partners, volunteers, and other federal agencies to manage the park efficiently. Employee salaries and benefits are included in the annual operating costs.

(3) Initial construction costs include those for construction or renovation of facilities. In the no action alternative, initial construction costs includes only those costs already planned within existing programs and with an approved funding source. Costs in this category also include deferred maintenance and any offset in deferred maintenance as a result of the actions in the alternative.

(4) Nonfacility costs include the costs of actions for cultural and natural resource management, visitor service materials, and other park management activities that are not related to a facility but would require substantial funding above the annual park operating costs.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The National Park Service is required to identify the environmentally preferable alternative in its environmental impact analysis documents for public review and comment. The National Park Service, in accordance with USDI policies contained in the department manual 516 DM 4.10 and NEPA's Forty Most Asked Questions, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in section 101(b) of the National Environmental Policy Act.

Section 101 states that it is the continuing responsibility of the federal government to

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
4. preserve important historic, cultural, and natural aspects of national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choices;
5. achieve a balance between population and resource use that would permit high standards of living and a wide sharing of life's amenities; and
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative A (no action) lacks the range of diversity and individual choices found in the other alternatives. It also does not provide as much resource protection and beneficial management as the other alternatives—more resource impacts would be expected with increasing visitor use levels in this alternative. Thus, the no-action alternative would not meet criteria 3, 4, and 5 as well the other alternatives.

Alternative B would expand visitor use opportunities and improve research and management of mounds through the new virtual research center, new trails, and the Sny Magill visitor contact station, thus providing for a wide range of negligible and beneficial uses of the environment (meeting criteria 3 and 5). This alternative would also meet criteria 2 and 4 through its continued protection of the undeveloped areas of the national monument and the emphasis on preserving entire landscapes.

Alternative C would also provide a high level of resource protection (meeting criteria 3 and 4). This alternative would continue protection of the undeveloped areas of the national monument. Alternative C would strengthen scientific inquiry at Effigy Mounds National Monument. This alternative would also expand visitor use opportunities through the addition of new trails and the Sny Magill visitor contact station, thus providing for a wide range of beneficial uses of the environment (meeting criteria 3 and 5). The range of visitor experience opportunities would also be improved under this alternative. However, while alternative C would allow more manipulation of land (by placing more acreage in the discovery zone), thus improving visitor opportunities, this zoning would not allow the degree of protection that alternative B allows.

After consideration of the alternatives in this general management plan, the environmentally preferable alternative is the same as the NPS preferred alternative (alternative B). This alternative would more fully satisfy all the national environmental criteria than would alternative A or C.

Alternative B and C are similar; however, in alternative B, the monument is primarily zoned for a more backcountry experience with less development (trails and signs). Thus, Alternative B would provide a high level of protection of natural and cultural resources. The alternative would also maintain an environment that supports a diversity and variety of individual choices and would integrate resource protection with an appropriate range of visitor use.

TABLE 5. ENVIRONMENTALLY PREFERABLE ALTERNATIVE

Criterion	Alternative A	Alternative B	Alternative C
1	Fully meets criterion	Fully meets criterion	Fully meets criterion
2	Partially meets criterion	Fully meets criterion	Fully meets criterion
3	Partially meets criterion	Fully meets criterion	Fully meets criterion
4	Partially meets criterion	Fully meets criterion	Partially meets criterion
5	Partially meets criterion	Fully meets criterion	Fully meets criterion
6	Partially meets criterion	Partially meets criterion	Partially meets criterion
Conclusion		Environmentally preferable alternative	

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM DETAILED EVALUATION

Early on in the alternative development process, the planning team created three alternatives schemes that each had a different area of emphasis: research, education, and visitor experience. It was then realized that the National Park Service should not emphasize only one area of operations or programming at the possible expense of other important programs, as this would result in an inability to meet project objectives and resolve need. The National Park Service should be doing all these in every alternative. Therefore, these alternatives were dropped from further consideration.

The planning team also considered alternatives that would facilitate more efficient maintenance of the monument. Because these alternatives would have required the construction of more roads, maintenance facilities, or both, in areas dense with fundamental resources (mounds), the team decided that greater maintenance efficiency, however desirable on one hand, would have too great an environmental impact.

The U.S. Fish and Wildlife Service considered constructing a visitor center for the Upper Mississippi River National Wildlife and Fish Refuge about 2 miles north of the Sny Magill Unit. The National Park Service at one time contemplated asking the Fish and Wildlife Service if they would consider a joint facility operated by both agencies that would, in part, satisfy the need for an NPS presence at the Sny Magill Unit. This idea was later dismissed because the center's location would be too far away from the Sny Magill Unit. In order to provide for resource protection and to improve the visitor experience at that unit, the visitor contact station must be close to the resource. Staff should be immediately available to direct visitors to stay on trails and to discourage pothunting (the illegal removal of archeological materials). The proposed visitor contact station in alternatives B and C would meet this need, yet be modest in size and would include, at most, small, simple exhibits.

Several individual actions were also dismissed from further consideration, such as building a boardwalk to the mounds in the Sny Magill Unit, because these types of actions could have too great an environmental impact. Although a boardwalk would have allowed year-round access to the mounds and reduced damage to natural resources, it was felt that such a structure would allow excessive impacts to cultural landscapes to occur. Another action considered was the construction of a small maintenance storage facility in the North Unit to keep equipment and supplies nearer to where they are used most often. However, archeological resources and rare plants were recently discovered in the proposed location, so this action was dismissed.

Another action was the construction of a small parking area for visitors who would hike into the northern part of the Heritage Addition. This was dismissed because of public safety reasons.

Another action was the reconstruction of the access road into the South Unit used by visitors to access this unit. This was dismissed because the completion of the trail from the visitor center would make (hiking) access provided by this road no longer necessary and reconstruction could cause too great of an impact on the environment.

The planning team considered tearing down the two former park housing units and constructing a multipurpose research

center / administrative facility in the previously developed footprint. During the development of the general management plan, the park housing units were remodeled to provide office space for the Heartland Exotic Pest Management Team. The team has since been moved to another location and the offices are now being used by monument staff. The addition of these offices addressed the monument's need for additional office space.

The need for expanded research, which was previously considered in a new multipurpose research center to be developed at the monument, was addressed in alternative B by adding a virtual research center and in alternative C by including an off-site research center.

The multipurpose research center would have also provided a place for groups of visitors to gather; this need can now be met with the vacated office space in the visitor center. Recent evidence indicated that the development of new facility (multipurpose research center) would have resulted in too great of an environmental impact. Development of the multipurpose research center on the lands to be purchased at the entrance of the Sny Magill Unit was also considered. However, these lands experience regular flooding and the scale of the development was determined to be technically infeasible at this site. Furthermore, the lack of security associated with this remote site would be insufficient for the protection of the museum collection archives.

MITIGATIVE MEASURES COMMON TO ALL ACTION ALTERNATIVES

Congress charged the National Park Service with managing the lands under its stewardship "in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (NPS Organic Act, 16 USC 1). As a result, the National Park Service routinely evaluates and implements mitigation whenever conditions occur that could adversely affect the sustainability of national park system resources.

To ensure that implementation of the action alternatives protects unimpaired natural and cultural resources and the quality of the visitor experience, a consistent set of mitigative measures would be applied to actions proposed in this plan. The National Park Service would prepare appropriate environmental review (i.e., those required by the National Environmental Policy Act, the National Historic Preservation Act, and other relevant legislation) for these future actions. As part of the environmental review, the National Park Service would avoid, minimize, and mitigate adverse impacts when practicable. The implementation of a compliance-monitoring program would include reporting protocols to ensure activities stay within the parameters of NEPA and NHPA compliance documents, U.S. Army Corps of Engineers section 404 permits, and so forth. The compliance-monitoring program would oversee these mitigative measures and would include reporting protocols.

The following mitigative measures and best management practices could be implemented to avoid or minimize potential impacts from the implementation of the alternatives. These measures would apply to all alternatives and were considered as part of the alternatives in the analyses of environmental impacts.

CULTURAL RESOURCES

The National Park Service would preserve and protect, to the greatest extent possible, resources that provide evidence of the human occupation of Effigy Mounds National Monument. Mitigative measures intended to reduce or eliminate adverse effects to cultural resources could include the following:

- Continue to develop inventories for and oversee research about archeological, historical, and ethnographic resources to better understand and manage the resources. Continue to manage cultural resources and collections following federal regulations and NPS guidelines.
- Subject projects to site-specific planning and compliance. Make efforts to avoid adverse impacts through adherence to the Secretary of the Interior's Standards for Archeology and Historic Preservation, the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, and the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes. Make use of screening and/or sensitive design that would be compatible with historic resources. If adverse impacts could not be avoided, mitigate these impacts through a consultation process with all interested parties.
- Inventory all unsurveyed areas in the park for archeological, historical, and ethnographic

resources as well as cultural and ethnographic landscapes.

- Document cultural and ethnographic landscapes in the park and identify treatments.
- Conduct archeological site monitoring and routine protection. Conduct data recovery excavations at archeological sites threatened with destruction, where protection or site avoidance during design and construction is infeasible.
- Avoid, if not possible mitigate, impacts on ethnographic resources. Mitigation would include continuing to provide access to traditional use and spiritual areas and screening new development from traditional use areas.
- Continue ongoing consultations with traditionally associated American Indian tribes. Protect sensitive traditional use areas to the extent feasible.
- Design facilities to avoid known or suspected archeological resources.
- If previously unknown cultural resources are discovered during project work, all work in the area would cease until the site can be evaluated by a qualified person and appropriate action can be implemented.
- Encourage visitors through the park's interpretive programs to respect and leave undisturbed any inadvertently encountered archeological resources and to respect and leave undisturbed any offerings placed by American Indians.
- Strictly adhere to NPS museum collections standards and guidelines on the display and care of artifacts. This would include artifacts used in exhibits in the visitor center.

NATURAL RESOURCES

The National Park Service would preserve and protect, to the greatest extent possible, the natural resources of Effigy Mounds National Monument. Mitigative measures intended to reduce or eliminate adverse effects to natural resources could include the following:

Air Quality

- Implement a dust abatement program. Standard dust abatement measures could include the following elements: water or otherwise stabilize soil, cover haul trucks, enforce speed limits on unpaved roads, minimize vegetation clearing, and revegetate after construction.

Soils

- Build new facilities on soil suitable for development. Minimize soil erosion by limiting the time that soil is left exposed and by applying other erosion control measures such as erosion matting, silt fencing, and sedimentation basins in construction areas to reduce erosion, surface scouring, and discharge to water bodies. Once work is completed, revegetate construction areas with native plants in a timely period.

Threatened and Endangered Species and Species of Concern

Mitigative actions would occur during normal park operations as well as before, during, and after construction to minimize immediate and long-term impacts on rare, threatened, and endangered species. These actions would vary by specific project and by area of the national monument affected; additional mitigation would be added

depending on the specific action and location. Many of the measures listed above for vegetation and wildlife would also benefit rare, threatened, and endangered species by helping to preserve habitat.

Mitigative actions specific to rare, threatened, and endangered species would include the following:

- Conduct surveys for rare, threatened, and endangered species as warranted.
- Locate and design facilities and actions to avoid adverse effects on rare, threatened, and endangered species. If avoidance is infeasible, minimize and compensate for adverse effects on rare, threatened, and endangered species as appropriate and in consultation with the appropriate resource agencies. Conduct work outside of critical periods for the specific species.
- Develop and implement restoration and/or monitoring plans as warranted. Plans should include methods for implementation, performance standards, monitoring criteria, and adaptive management techniques.
- Implement measures to reduce adverse effects of nonnative plants and wildlife on rare, threatened, and endangered species.

Vegetation

- Monitor areas used by visitors (e.g., trails) for signs of native vegetation disturbance. Use public education, revegetation of disturbed areas with native plants, erosion control measures, and barriers to control potential impacts on plants from trail erosion or social trailing.
- Develop revegetation plans for the disturbed area and require the use of native species. Revegetation plans should specify seed/plant source, seed/plant mixes, soil preparation, and so forth. Salvaged vegetation should be used to the extent possible.

Water Resources

- To prevent water pollution during construction, use best management practices such as erosion control measures, minimized discharge to water bodies, and regular inspection of construction equipment for leaks of petroleum and other chemicals. Minimize the use of heavy equipment in a waterway.
- Build a runoff filtration system to minimize water pollution from larger parking areas.

Wildlife

- Employ techniques where necessary to reduce impacts on wildlife, including visitor education programs and restrictions on visitor and park management activities.
- Implement a natural resource preservation program. Standard measures would include construction scheduling, biological monitoring, erosion and sediment control, use of fencing or other means to protect sensitive resources adjacent to construction, removal of all food-related items or rubbish, topsoil salvage, and revegetation. These measures could include specific construction monitoring by resource specialists as well as the development and monitoring of treatment and reporting procedures.

Wetlands

- Wetlands are delineated by qualified NPS staff or certified wetlands specialists and clearly marked before construction work. Construction activities are performed in a cautious manner to prevent damage caused by equipment, erosion, siltation, and so forth.

Natural Soundscapes

- Noise impacts from construction would be minimized by making use of quieter technology, scheduling interpretive programs around construction, locating stationary noise sources as far from sensitive uses as possible, and requiring that construction equipment not be left idling any longer than necessary.

Scenic Resources

Mitigative measures designed to minimize visual intrusions include the following:

- Where appropriate, use facilities such as trails and fences to route visitors away from sensitive natural and cultural resources, while still permitting access to important viewpoints.
- Design, site, and construct facilities to avoid or minimize adverse effects on natural and cultural resources and visual intrusion into the natural and cultural landscape in compliance with federal law, NPS policy, and associate management planning documents.
- Provide vegetative screening where appropriate to hide intrusions into the natural scene.

FUTURE STUDIES AND IMPLEMENTATION PLANS NEEDED

After completion and approval of a general management plan for the national monument, other more detailed studies and plans would be needed before specific actions could be implemented. As required, additional environmental compliance (National Environmental Policy Act, National Historic Preservation Act, and other relevant laws and policies), and public involvement would be conducted.

Additional studies would include, but would not be limited to, the following:

1. A cultural landscape report is needed on the entire monument. This is a monument priority. Update the cultural landscape inventory to determine whether an ethnographic landscape exists at the national monument, determine the boundary of such a landscape, and identify resources.

2. A resource stewardship strategy would expand the desired natural and cultural resource conditions from this general management plan, describes the current condition of the resources, and identifies the difference between current and desired conditions. Comprehensive strategies to achieve and maintain the desired resource conditions are developed that identify specific monitoring indicators and targets. The resource stewardship strategy guides preparation of implementation plans such as a vegetation management plan, cultural resource management plan, nonnative species control plan, or a fire management plan.

3. A public access / trail development plan with environmental assessment (or other appropriate level of compliance) under alternatives B and C, using the direction provided in this general management plan. The trail plan would focus on the Heritage Addition, but would also address new trail connections from the visitor center to the Heritage Addition and South Unit trail system (Yellow River Bridge to South Unit trails).

During the course of developing this general management plan, two options for providing safe access to the northern part of the Heritage Addition using trails beginning from the visitor center area were discussed:

- Building a trail on the northern side of the Yellow River, between the river and Highway 76, which would enter the northern part of the Heritage Addition from the east side on an existing logging road. Visitors would reach the start of this trail at the visitor center area by crossing through the tunnel under the highway and continuing into the Heritage Addition.
- Building a very small parking area in the Heritage Addition along highway 76 from which visitors could directly access trails in the northern part of the Heritage Addition. This option was removed from consideration because of safety issues associated with the parking lot access road intersection with highway 76.

There may also be other options for visitor access to the northern part of the Heritage Addition. The access plan and environmental assessment would

analyze other potential options as well as the two options listed above.

4. Under the alternatives B and C, future management of the Sny Magill Unit would require a site development plan with environmental assessment (or other appropriate level of compliance) to analyze and decide on the following:

   - appropriate designs and locations for a visitor contact facility on adjacent property should such property be acquired
   - the alignment and design of an access trail from the visitor contact station to the mounds
   - alternative surfaces and locations of a trail to facilitate access to and interpretation of the mounds without causing adverse impacts
   - appropriate staffing levels to provide adequate visitor services and protect resources

5. The long-range interpretation plan for the monument would be finalized and would include placement information for new trail interpretive and directional signs.

6. A long-term mound maintenance plan would be developed to guide the future care and treatment of vegetation on or near the mounds.

SUMMARY TABLES

TABLE 6. SUMMARY OF ALTERNATIVES

Alternative A	Alternative B	Alternative C
Current management strategies and trends would continue under the no-action alternative. There would be no major changes to monument operations or visitor services. All cultural sites would continue to be maintained and preserved using current practices. The mounds would continue to be protected and preserved. Management treatments would vary according to the cover and condition of individual mounds. Historic sites would be protected from degradation, but not otherwise managed. The Heritage Addition would not have a long-term plan in place. The North, South, and Sny Magill units would continue to be managed as they are currently.	Alternative B would provide enhanced natural and cultural resource protection, opportunities for increased understanding of the monument, and expanded opportunities for visitors to experience relative quiet and solitude. Due to the sensitivity and irreplaceable nature of the mounds and cultural landscape, the National Park Service would accomplish these goals with the minimum amount of development. The desired visitor experience would be for visitors to make personal connections to the monument's tangible resources through understanding of the significance of the (pre-European contact) American Indian moundbuilding story and its relationship to the heritage of the region. The landscape and visitor facilities would support a contemplative atmosphere with opportunities for the public to spend time reflecting on the lives and legacy of the moundbuilders and the sacred nature of the site today. Education and interpretation of the natural resources of the park would be expanded. The natural setting created by preserving or restoring landscapes would provide a connection between the moundbuilding cultures and the environment that shaped their lives and beliefs. This would be especially enhanced through the extensive backcountry zone under this alternative. Visitor experiences throughout the monument would be primarily self-guided on a variety of trail types in a quiet, contemplative setting to maintain an atmosphere of respect toward the sacred nature of the monument.	Alternative C would provide enhanced and expanded opportunities for visitors to experience the monument and increase their understanding of the moundbuilders while protecting and preserving natural and cultural resources. The desired visitor experience would be for visitors to make personal connections to the monument's tangible resources through understanding of the significance of the (pre-European contact) American Indian moundbuilding story and its relationship to the heritage of the region. As a means of enhancing the visitor experience, public access to various units of the monument would be improved in this alternative. The landscape and visitor facilities would provide opportunities for the public to learn about the lives and legacy of the moundbuilders and the sacred nature of the site today. The natural setting created by preserving or restoring landscapes would provide a connection between the moundbuilding cultures and the environment that shaped the moundbuilders' lives and beliefs. Visitor experiences throughout the monument would be on a variety of trail types that allow visitors to learn about the mounds and the moundbuilders. Because more of the monument would be in the discovery zone in this alternative, visitors would be likely to encounter other visitors or park staff during their visit.

TABLE 6. SUMMARY OF ALTERNATIVES

Alternative A	Alternative B	Alternative C
	Under this alternative, the diversity of visitor trail experiences would be expanded from that currently offered at the monument. Presently, visitors walk on trails to view mounds that have had the covering vegetation manicured so that the mounds are clearly visible. Consistent with the resource conditions and visitor experiences defined in the backcountry zone, visitors to some areas of the monument would be able to experience a walk on marked trails through natural, undeveloped landscapes and view some mounds in a more natural state (with only some woody materials removed for preservation purposes). Providing access to mounds that are in different conditions would allow an expansion of existing interpretive opportunities and an increased understanding of the monument's fundamental resources.	
	A virtual research center would be developed to serve as an online portal for information exchange on mound research and management in the region. The virtual research center would be developed and managed by monument staff, in partnership with other land managers and academic institutions.	A research center would be developed outside of the monument in a neighboring town. The facility would also house the monument's museum collections and archives. The facility would have an office for the center director, a small research space, and a library for NPS and visiting researchers.
General Zoning		
There would be no zoning in this alternative. Management direction from the previous general management plan and other planning would remain in effect.	In this alternative, the majority of the monument is in the backcountry zone. The area around the visitor center is zoned for development and the most heavily visited trails and mound groups are located in the discovery zone.	In this alternative, most of the North and South units would be placed in the discovery zone, which allows for more visitor amenities (developed trails, benches, etc.). The Heritage Addition would be zoned backcountry, which allows for less-developed public trails to provide some access to this area and to other areas of the monument while protecting cultural and natural resources.
	While the Riverfront Tract is in the monument's authorized boundary, it is not currently owned by the National Park Service. If this tract is acquired, it would be managed in the backcountry zone.	While the Riverfront Tract is in the monument's authorized boundary, it is not currently owned by the National Park Service. If this tract is acquired, it would be managed in the backcountry zone.

TABLE 6. SUMMARY OF ALTERNATIVES

Alternative A	Alternative B	Alternative C
Heritage Addition		
Visitors would continue to be able to experience the landscape of the Heritage Addition from overlooks in the North and South units and through infrequent ranger-led hikes or tours.	The Heritage Addition would be primarily zoned as backcountry.	The Heritage Addition would be primarily zoned as backcountry.
	Public trails would be provided in the Heritage Addition using the existing county road and appropriate logging roads. Some new trails could be constructed according to a public access/trail development plan (see the "Future Studies and Implementation Plans Needed" section). Trails would be designed according to the trail standards for the backcountry zone. Trails would be for pedestrian use—no horses, bikes, or public vehicles would be allowed.	Public trails would be provided in the Heritage Addition using the existing county road and appropriate logging roads. Some new trails could be constructed according to a public access/trail development plan (see the "Future Studies and Implementation Plans Needed" section). Trails would be designed according to the trail standards for the backcountry zone. Trails would be for pedestrian use—no horses, bikes, or public vehicles would be allowed.
	The specific location of trails in the Heritage Addition would be identified in a subsequent trail development or public access plan (see the "Future Studies and Implementation Plans Needed" section). The access plan would explore and analyze potential options that require a minimum of new trail construction.	The specific location of trails in the Heritage Addition would be identified in a subsequent trail development or public access plan (see the "Future Studies and Implementation Plans Needed" section). The access plan would explore and analyze potential options that require a minimum of new trail construction.
Visitors would receive information and interpretation through nonpersonal media at the visitor center (exhibits, printed materials, etc.) and would have opportunities to appreciate the related cultural environment in a quiet contemplative setting.	In addition to information provided at the visitor center, wayside and sign placement (for orientation and/or interpretation) would be minimized; locations would be selected to carefully reflect the contemplative setting desired. Placement of signs would be guided by the long-range interpretation plan (see the "Future Studies and Implementation Plans Needed" section).	In addition to information provided at the visitor center, wayside and sign placement (for orientation and/or interpretation) would be minimized; locations would be selected to carefully reflect the contemplative setting desired. Placement of signs would be guided by the long-range interpretation plan (see the "Future Studies and Implementation Plans Needed" section).
Public access would include canoeing and infrequent ranger-led hikes. No facilities would be provided and take-out would continue to be discouraged.	Public access would include canoeing and ranger-led hikes. No facilities would be provided. Boat take-out would be prohibited and this prohibition would be actively enforced.	Public access would include canoeing and ranger-led hikes. No facilities would be provided. Boat take-out would be prohibited and this prohibition would be actively enforced.
Wild and scenic river designation would not be pursued for the Yellow River.	Wild and scenic river designation would be pursued for the Yellow River.	Wild and scenic river designation would be pursued for the Yellow River.
	The National Park Service would seek hiking access, county relinquishment, or abandonment of the restricted use county road to facilitate use of the road as a trail.	The National Park Service would seek hiking access, county relinquishment, or abandonment of the restricted use county road to facilitate use of the road as a trail.

TABLE 6. SUMMARY OF ALTERNATIVES

Alternative A	Alternative B	Alternative C
North Unit (not including the Visitor Center Area)		
	In alternative B, most of the North Unit would be zoned as backcountry. The area immediately north of the visitor center and maintenance area would be placed in the discovery zone.	In alternative C, almost the entire North Unit would be zoned as discovery. The discovery zoning is designed to provide improved access to the resources in the North Unit.
Trails would continue to be maintained or improved for visitor access and safety while preserving mounds by relocating trails away from mound sites.	Existing trails could undergo minor realignment for resource protection purposes in the backcountry zone and for visitor experience in the discovery zone. Existing trails that do not meet the trail standards for the backcountry and discovery zones would be corrected.	Existing trails could undergo minor realignment for resource protection purposes. Existing trails that do not meet the trail standards for the backcountry and discovery zones would be corrected.
Visitors would receive information and interpretation through personal services such as hikes and nonpersonal media (trailside exhibits, printed materials, etc.).	Visitors would be provided opportunities to reflect on the influence of the natural world on the moundbuilders in a primarily quiet contemplative setting. There would be limited personal services such as guided hikes and talks. On-site information could be expanded subsequent to a long-range interpretation plan.	Visitors would have opportunities to experience the influence of the natural world of the moundbuilders through personal services such as guided hikes, talks, and nonpersonal media (trailside exhibits, printed materials, etc.). On-site information could be expanded subsequent to a long-range interpretation plan.
The National Park Service would not actively seek to acquire the Riverfront Tract, which is already within the authorized boundary, unless its cultural resources are endangered in some way or the property is put up for sale.	The National Park Service would pursue acquisition of the Riverfront Tract in the legislated boundary from a willing seller to protect cultural resources on the tract and would evaluate the sites for national register or national landmark status.	The National Park Service would pursue acquisition of the Riverfront Tract in the legislated boundary from a willing seller to protect cultural resources on the tract and would evaluate the sites for national register or national landmark status.
Fire Point Trail would remain where it is and the mound at Fire Point would not be stabilized.	If possible without compromising resource integrity, the existing trail at Fire Point would be moved for visitor safety and resource preservation. The mound at Fire Point would be stabilized after the trail is moved.	If possible without compromising resource integrity, the existing trail at Fire Point would be moved for visitor safety and resource preservation. The mound at Fire Point would be stabilized after the trail is moved.
North Unit Visitor Center Area		
	This area would be managed as part of the development zone.	This area would be managed as part of the development zone.
The visitor center complex would be maintained and media upgraded as needed.	The monument's museum collections and archives would either be (1) moved to a storage facility outside of the monument that meets NPS museum management standards; or (2) the current facility would be improved and staffing would be increased to more closely meet NPS museum collections standards.	The monument's museum collections and archives would be moved to a storage facility in the new research center, to be located outside the monument in a nearby town. The storage facility would meet NPS museum management standards.
	Exhibit, museum, and bookstore space in the visitor center would be reconfigured.	Exhibit, museum, and bookstore space in the visitor center would be reconfigured.

TABLE 6. SUMMARY OF ALTERNATIVES

Alternative A	Alternative B	Alternative C
North Unit Visitor Center Area		
Visitors would continue to receive formal and informal services at the visitor center; these would include educational programs, information and orientation, demonstrations, and hikes.	Depth of information and interpretation content in the visitor center would increase and new technology would be used as it becomes available.	Depth of information and interpretation content in the visitor center would increase and new technology would be used as it becomes available.
South Unit		
This unit would be managed to support a low level of visitor use while maintaining the primitive setting. Trail signs would be upgraded; this would include a wayside at the Marching Bear Group. Visitors would be primarily on their own on existing trails with minimal contact with monument staff or other visitors. Occasional special hikes connecting the tangible resources of the moundbuilders and natural features of the monument would take place.	In alternative B, the majority of the South Unit would be zoned for backcountry. The area immediately south of the visitor center and maintenance area would be placed in the discovery zone. In this alternative, the majority of the existing trails would be in the backcountry zone. On-site information could be expanded subsequent to a long-range interpretation plan. Visitors would be primarily on their own in the backcountry zone and have minimal contact with monument staff or other visitors. A trail connecting the Yellow River Bridge to the trails in the South Unit would be developed according to a public access or trail development plan (see the "Future Studies and Implementation Plans Needed" section). Existing trails that do not meet the trail standards for the backcountry and discovery zones would be corrected.	In alternative C, the majority of the South Unit would be in the discovery zone. The discovery zoning is designed to provide improved access to the resources in the South Unit. In this alternative, the majority of the existing trails would be located in the discovery zone. On-site information could be expanded subsequent to a long-range interpretation plan. Visitors would be primarily on their own on well-developed trails, but are likely to have some contact with monument staff or other visitors. A trail connecting the Yellow River Bridge to the trails in the South Unit would be developed according to a public access or trail development plan (see the "Future Studies and Implementation Plans Needed" section). Existing trails that do not meet the trail standards for the backcountry and discovery zones would be corrected.
Sny Magill Unit		
	In alternative B, the majority of the Sny Magill Unit is zoned for backcountry. A small portion of the unit that contains an improved trail is zoned discovery.	In alternative C, the majority of the Sny Magill Unit is zoned for backcountry. A portion of the unit that contains an improved trail is zoned discovery. The National Park Service would pursue acquisition of the land between the highway and the railroad tracks from a willing seller for a contact station to provide an NPS presence for resource protection and visitor services.

TABLE 6. SUMMARY OF ALTERNATIVES

Alternative A	Alternative B	Alternative C
Sny Magill Unit, continued		
This unit would be primarily managed for preservation of the mounds with limited amenities for visitor use. The parking area and wood-chipped trail would continue to be maintained. No other development under this alternative.	The National Park Service would pursue acquisition of the land between the highway and the railroad tracks from a willing seller for a contact station to provide an NPS presence for resource protection and visitor services.	
There would continue to be very limited NPS presence in this unit. Visitors would receive information and interpretation on this unit at the main unit visitor center, and would have opportunities to appreciate the related cultural environment in a quiet contemplative setting.	Depending upon the time of the year, visitors would receive formal and informal personal services at the contact station such as NPS-conducted educational programs; conducted interpretive demonstrations, talks, and walks; and additional contacts with rangers.	Depending on the time of year, visitors would receive formal and informal personal services at the contact station such as NPS-conducted educational programs; conducted interpretive demonstrations, talks, and walks; and additional contacts with rangers.
The existing trail would remain as it is.	A portion of the existing trail would be improved according to the Sny Magill site development plan (see the "Future Studies and Implementation Plans Needed" section). The trail would be built from the parking area only to the first mounds encountered (approximately 412 yards).	The existing trail (approximately (885 yards) would be improved for visitor access and natural resource management according to the Sny Magill site development plan (see the "Future Studies and Implementation Plans Needed" section).
The public would continue to have access to this unit for recreational activities in approporiate areas.	The public would continue to have access to this unit for recreational activities in appropriate areas. Boating on the Mississippi River adjacent to and within this unit would be monitored for use levels and resource impacts.	The public would continue to have access to this unit for recreational activities in appropriate areas. Boating on the Mississippi River adjacent to and within this unit would be monitored for use levels and resource impacts.
The National Park Service would not explore possible cooperative partnerships with other agencies such as the U.S. Fish and Wildlife Service to provide visitor services.	The National Park Service would explore possible cooperative partnerships with other agencies such as the U.S. Fish and Wildlife Service to provide visitor services.	The National Park Service would explore possible cooperative partnerships with other agencies such as the U.S. Fish and Wildlife Service to provide visitor services.
	A site plan would be developed to evaluate options for location and design of the visitor contact station, access trail from visitor contact station to the mounds, and trail surface improvements (see "Future Studies and Implementation Plans Needed" section).	A site plan would be developed to evaluate options for location and design of the visitor contact station, access trail from visitor contact station to the mounds, and trail surface improvements (see "Future Studies and Implementation Plans Needed" section).

TABLE 7. SUMMARY OF KEY IMPACTS

	Actions Common to All Alternatives	Alternative A No Action	Alternative B NPS Preferred	Alternative C
CULTURAL RESOURCES				
Archeological Resources	Visitor use, bank stabilization, and maintenance activities would have permanent, local, minor to moderate, adverse impacts, but the impact intensities would be reduced through avoidance, mitigation, and construction design. A complete cultural resource inventory of the monument and continued mound preservation activities would have a long-term, beneficial impact on archeological resources throughout the monument.	Trail maintenance would occur in previously disturbed areas. Trails would be realigned in areas to avoid significant archeological resources. These actions could lead to local, negligible to minor, adverse impacts that would be long term.	The ground disturbing activities, trail work, and construction would be located to avoid adverse impacts to archeological resources. These actions would result in localized, negligible to minor, permanent, adverse impacts to archeological resources, or no impacts at all. Acquiring tracts of land and evaluating them for national register-significant archeological resources would give park managers a baseline for managing these resources. Rangers would also have jurisdiction to protect these resources under federal preservation laws. These actions would result in long-term, local, beneficial impacts to archeological resources.	
Cultural Landscapes	Visitor use, maintenance activities, and bank stabilization would have long-term, negligible to minor, local, negative effects to the cultural landscapes throughout the monument, but the impact intensities would be reduced through avoidance, mitigation, and construction design. Stabilization of the riverbank would have a moderate, long-term, adverse impact that would be offset by the long-term, beneficial effect of stabilizing the riverbanks to protect nearby cultural resources. Maintaining mound appearance would result in a long-term, beneficial impact throughout much of the monument because the landscape integrity would be retained or restored.	There would be no additional impacts to cultural landscapes beyond those identified as common to all alternatives.	Trail work would be confined to previously disturbed areas or designed to avoid or minimize adverse impacts to landscape character-defining features. These activities could have negligible to minor, long-term, localized impacts to the cultural landscapes, or no impacts at all. Improved trail designs that encourage visitor to stay off the mounds would result in a long-term, beneficial impact throughout much of the monument. Acquiring tracts of land, stabilizing Fire Point Mound, and restoring landscapes would afford greater federal protection over new lands as well as perpetuate character-defining landscape features. These actions would result in long-term, beneficial impacts throughout much of the monument.	

TABLE 7. SUMMARY OF KEY IMPACTS

	Actions Common to All Alternatives	Alternative A No Action	Alternative B NPS Preferred	Alternative C
CULTURAL RESOURCES, continued				
Ethnographic Resources	The overall impact of actions that are common to all the alternatives would be long term and beneficial on ethnographic resources, because tribal access and the ability to conduct tradition practices usually would not be limited. Prescribed burns could limit access, which would result in a short-term, minor, adverse impact.	Impacts would be the same as those identified in the "Actions Common to All Alternatives" section.	Impacts would be the same as those identified in the "Actions Common to All Alternatives" section.	Impacts would be the same as those identified in the "Actions Common to All Alternatives" section.
Museum Collections		There would be minor to moderate, long-term, adverse impacts due to storage conditions and the inability to accommodate visiting researchers. The collections would continue to provide a minor, but important, beneficial cumulative contribution to-regional museum collections.	Alternative B would result in housing the collections in a facility that fully meets NPS museum collections standards or more closely meet NPS museum collections standards. The alternative would allow greater accessibility to the collections than is currently available under alternative A. The impact to the preservation of the collections and their usefulness in the long term would be moderate to major and beneficial, locally, regionally, and possibly nationally and internationally.	Alternative C would result in housing the collections in a facility that fully meets NPS museum collections standards. The alternative would allow greater accessibility to the collections than is currently available under alternative A. The impact to the preservation of the collections and their usefulness in the long term would be moderate to major and beneficial, locally, regionally, and possibly nationally and internationally.

TABLE 7. SUMMARY OF KEY IMPACTS

	Actions Common to All Alternatives	Alternative A No Action	Alternative B NPS Preferred	Alternative C
NATURAL RESOURCES				
Soils		This alternative would have no new impacts on soils. There would be no cumulative impact.	There would be short-term, minor, adverse impacts and long-term, negligible to minor, adverse impacts to soil resources in the monument. There would be a minor, adverse cumulative impact.	There would be short-term, minor, adverse impacts and long-term, negligible to minor, adverse impacts to soil resources in the monument. There would be a minor, adverse cumulative impact.
Wild and Scenic Rivers		No effect.	No effect.	No effect.
Vegetation		There would be continuation of negligible and minor, adverse impacts to vegetation. There would be a minor to moderate, adverse, cumulative impact.	There would be short-term, minor, adverse impacts and long-term, negligible, adverse impacts to vegetation in the monument There would be a minor to moderate adverse cumulative impact.	There would be short-term, minor, adverse impacts and long-term, negligible, adverse impacts to vegetation in the monument There would be a minor to moderate adverse cumulative impact.
Fish and Wildlife		There would be continuation of long-term negligible adverse impacts to fish and wildlife. Cumulative effects would be minor to moderate and adverse.	There would be short-term, minor, adverse impacts and long-term, negligible, adverse impacts to fish and wildlife. Cumulative effects would be minor to moderate and adverse.	There would be short-term, minor, adverse impacts and long-term, negligible, adverse impacts to fish and wildlife. Cumulative effects would be minor to moderate and adverse.
Special Status Species		There would be no effect on the federal listed Higgins eye pearlymussel, Iowa Pleistocene snail, prairie bush clover, western prairie fringed orchid, northern monkshood, or state listed species. There would be no	This alternative may affect, but is not likely to adversely affect, the federal listed Higgins eye pearlymussel, Iowa Pleistocene snail, prairie bush clover, western prairie fringed orchid,	This alternative may affect, but is not likely to adversely affect, the federal listed Higgins eye pearlymussel, Iowa Pleistocene snail, prairie bush clover, western prairie fringed orchid,

TABLE 7. SUMMARY OF KEY IMPACTS

	Actions Common to All Alternatives	Alternative A No Action	Alternative B NPS Preferred	Alternative C
		project-related cumulative effects on federal listed or other special status species.	northern monkshood, or state listed species. There would be minor, adverse, cumulative effects on federal listed or other special status species.	northern monkshood, or state listed species. There would be minor, adverse, cumulative effects on federal listed or other special status species.
Viewsheds		There would be no impact on visual resources in the monument. There would be no project-related cumulative effects.	There would be short-term and long-term, minor, adverse impacts on visual resources in the monument. Cumulative effects would be minor and adverse.	There would be short-term and long-term, minor, adverse impacts on visual resources in the monument. Cumulative effects would be minor and adverse.
OTHER				
Visitor Use and Experience		This alternative would result in the continuation of long-term, minor to moderate, adverse impacts and minor beneficial, impacts to aspects of visitor use and experience, but would not result in any new impacts. There would be no project-related cumulative impacts.	Implementing alternative B would result in several long-term, minor beneficial impacts and a long-term, minor, adverse effect on the visitor experience. Overall cumulative impacts would be long-term, minor, and beneficial.	This alternative would result in minor, long-term, beneficial impacts on the visitor experience. Overall, cumulative impacts would be long-term, minor, and beneficial.
Socioeconomic Environment		There would be short-term, negligible to minor, beneficial economic impacts in the region. Overall cumulative effects would be minor and beneficial.	There would be short-term and long-term, minor, beneficial economic impacts in the region. Overall cumulative effects would be minor and beneficial.	There would be short-term and long-term, minor, beneficial economic impacts in the region. Overall cumulative effects would be minor and beneficial.

TABLE 7. SUMMARY OF KEY IMPACTS

	Actions Common to All Alternatives	Alternative A No Action	Alternative B NPS Preferred	Alternative C
OTHER, continued				
Monument Operations and Facilities		There would be the continuation of long-term, minor, adverse impacts. Overall cumulative effects would be minor and adverse.	There would be short-term and long-term, minor, adverse impacts to monument operations and facilities. Cumulative effects would be negligible.	There would be short-term and long-term, minor, adverse impacts to monument operations and facilities. Cumulative effects would be negligible.

3 Affected Environment

Red-tailed Hawk

CULTURAL RESOURCES

BACKGROUND

The National Park Service is charged with the stewardship of many of the nation's most important natural and cultural resources and is responsible for preserving these resources for the enjoyment of present and future generations. The cultural resources of Effigy Mounds National Monument are defined as the material evidence of past human activities. Among these are archeological resources, cultural landscapes, ethnographic resources, historic buildings and structures, and museum collections and archives.

By their nature, cultural resources are finite and *nonrenewable;* as a result, national monument management activities and policies must reflect awareness of their *irreplaceable* character. Therefore, NPS cultural resource management involves research, evaluation, documentation, and registration of national monument resources, along with the establishment of priorities to ensure that these resources are appropriately preserved, protected, and interpreted to the public.

Formal Designation of Resources

The National Register of Historic Places is the nation's official list of cultural properties worthy of preservation. Effigy Mounds National Monument was declared a national monument in 1949 and listed in the national register in 1966. The documentation for the national register was submitted in 1976 and an update of section 8 (significance) of the nomination—following the inclusion of the Heritage Addition in the monument and the following further scientific research—has been prepared.

A historic resource study describing the cultural resources of the national monument was completed in 2003. It provided syntheses of site history, site archeology, prepared an updated historical significance section of the nomination form, made recommendations for future research, and provided an exhaustive bibliography of site history and archeology. An archeological overview and assessment was completed in 2004 (NPS 2004).

Currently, 206 mounds or mound groups are listed on the NPS List of Classified Structures. Two historic resources (Old Military Road in the South Unit, and a cistern near Old Military Road) are also listed. All are listed as being either of national significance in their own right or as contributing to the national significance of Effigy Mounds National Monument. All known mound sites are also listed on the NPS Archeological Sites Management Information System (ASMIS) and *Iowa Site Inventory* and *Iowa State File*.

The Jefferson Davis Sawmill site, partially within the monument boundary, has not been fully investigated but has been determined eligible for listing in the National Register of Historic Places.

Other resources, such as the remains of farmsteads, rock shelters, prehistoric stone quarries, and village sites are also known to be within the boundaries of the national monument. Some of these have been recorded, but a systematic inventory of all resources in the park has not yet been completed.

Period of Significance

Although Effigy Mounds National Monument evidences occupation going back 2,500 years or more, two periods of

significance based on extant resources of designated national significance are evident: the period of mound building from approximately 500 BC to AD 1250, and the period of settlement / Indian removal (roughly 1800 to 1849). As additional research is completed on other types of archeological resources within the national monument, the period of significance could be expanded to encompass a greater period of time.

ARCHEOLOGICAL RESOURCES

Effigy Mounds National Monument contains important archeological resources representative of human use over time, as well as ongoing American Indian use. The area was used primarily by ancient, historic, and contemporary American Indian peoples, although some remains of historic European Americans are also present.

Archeologists generally believe the first Iowans were probably Paleo-Indians, (10,000 to 7000 BC). Paleo-Indians are credited with crossing the Bering Land Bridge toward the end of the last Ice Age and peopling the Americas. They were migratory hunters and are associated often with large extinct megafauna such as mammoth and mastodon. The origin stories of many American Indian tribes differ from this theory.

Associated with the Paleo-Indians are several diagnostic flaked stone spear points, known as "Clovis" and "Folsom," that distinguish the Paleo-Indian period. Most of what we know about the Paleo-Indians is based on items that came from soil known to be more than 9,000 years old or associated with either Clovis or Folsom points. Other items of everyday use created by Paleo-Indians are virtually indistinguishable from similar items created later, so the relationship with the two point types or ancient soil is particularly important to the identification of their presence. These people made use of whatever plant and animal food they could harvest seasonally. They lived in small, probably family, groups and their total number would have been small. Despite their hunting skills, life would have been very difficult and the search for food, preparation of hides, and making of weapons would have been nearly all consuming. Some evidence of their existence has been identified in Allamakee and Clayton counties, but none has been found within the national monument.

Approximately, 9,000 years ago, the way of life of the Paleo-Indians changed. The climate continued to become warmer and drier. The period from 7000 to 500 BC is referred to as the Archaic Period. The inhabitants had a much less harsh climate in which to hunt, fish, and gather nuts and berries. The tools made and used by these peoples became more varied and distinct. The two types of points indicative of the Paleo-Indian period gave way to a variety of point types during the Archaic. With greater success in procuring food, the Archaic peoples were able to spend more time in a semisedentary, communal culture. By the end of the Archaic Period, the first mounds associated with burials were built, reflecting the growth of the population and, with it, the free time to develop more complex belief systems and items for trade.

Following, and perhaps growing out of, the Archaic Period, were the Woodland Period cultures (500 BC to AD 1250). The Woodland peoples were much more sedentary than the cultures that preceded them, reflecting an agricultural lifestyle that made larger permanent or seasonal village units possible and allowed them to stay in one place longer.

Sophisticated pottery made preservation and cooking of foods more practical. Indeed, pottery typology joins point types as tools archeologists use to identify differences through time, and through regions. Trade of goods and increased communication with other village units allowed a flourishing of the culture, traditions, and belief systems. Early on, the mounds constructed were simple conical burial mounds, evolving into compound and linear mounds and culminating in the great effigy mounds of the late Woodland Period.

Archeological research indicates a time span of approximately 1,800 years of mound building. Generally speaking, this would have occurred 500 BC to AD 1250, spanning the period from the late Archaic to the late Woodland periods. The increasing complexity of the mounds, the manner of burials, and the inclusion of exotic burial items attest to the growing sophistication of the Woodland peoples. Effigy Mounds National Monument contains examples of both Archaic and Woodland period mounds.

Somewhere around AD 1250, the moundbuilding stopped; whether this resulted from pressures caused by expanding populations, warfare among groups of villages, or migration from outside is not fully understood. However, the Woodland peoples seem to have been replaced by people referred to as "Oneota" and representative of the influence of the Mississippian cultures farther south. Large-scale agriculture and large villages necessitated a movement out of the forests and into large open areas. It was likely a time of cultural ferment with continued trade interaction, population growth, and warfare.

Although numerous surveys have been undertaken within Effigy Mounds National Monument since the monument was first discovered, the national monument still lacks a complete archeological inventory of mounds, villages sites, rock shelters, quarries, town sites, mills, farmsteads, schools, and other human-made features as required by section 110 of the National Historic Preservation Act.

Effigy Mounds National Monument today encompasses 2,526 acres with more than 200 mounds, 31 of which are the namesake effigy mounds. In the North and South units of the national monument alone, 18 rock shelters and several possible village sites have been identified, but not extensively studied. These have great potential for understanding the lifeways of the people who built the mounds.

For a more in-depth discussion of the archeology of Effigy Mounds National Monument, the reader is referred to "A Guide to Effigy Mounds National Monument" by Dennis Lenzendorf.

ETHNOGRAPHIC RESOURCES

Introduction

Ethnographic resources are variations of natural resources and standard cultural resource types. They are subsistence and ceremonial locales and sites, structures, objects, and rural and urban landscapes assigned cultural significance by traditional users. The decision to call resources "ethnographic" depends on whether associated peoples perceive them as traditionally meaningful to their identity as a group and the survival of their lifeways. Some such resources may be designated by other terms and cross-listed in other NPS inventories. Sites defined as archeological for preservation purposes, for example, are ethnographic if traditional religious practitioners consider them significant sources of spiritual power. Members of associated groups may also ascribe meaning to properties in park collections perceived as sacred or as items of cultural identity and heritage. Groups also assign

their own cultural meanings to natural landscapes and localities.

The traditional management distinction between natural and cultural resources may be inapplicable where ethnographic resources are concerned. When natural resources acquire meaning according to the different cultural constructs of a particular group, they become ethnographic and thus cultural resources as well.

One particular type of ethnographic resource is a traditional cultural property which is an ethnographic resource in or eligible for inclusion in the National Register of Historic Places. Traditionally associated tribes and National Park Service staff are working together to nominate the entire land area of Effigy Mounds National Monument as a traditional cultural property.

Resources of the Monument

Effigy Mounds National Monument has a long-standing connection with a number of American Indian groups (see the list of traditionally associated tribes under "Agencies and Organizations Receiving a Copy of this Document" in Chapter 5). In particular, the Ho-Chunk Nation of Wisconsin claims a close affinity to the site.

The national monument represents a point of connection with the spiritual world of the ancestors and a place of great spiritual power. It has been visited continuously by American Indians for hundreds of years. American Indians come to the site individually and in groups. They come to learn about their ancestors as described in interpretive talks and exhibits in the visitor center by NPS staff. They come in groups to tell and reflect upon their history and to relate their stories. They come to honor their ancestors and commune with them. Some may come for spiritual guidance as in a vision quest.

Among the resources that are considered ethnographic are the mounds; the American Indian archeological and historic artifacts within the national monument collections; and the landscape of the national monument, including the animals and birds that inhabit it. It is likely that the landscape qualifies as an ethnographic landscape; however, additional evaluation of the landscape and its associations with contemporary American Indians is necessary before that determination can be made.

In accordance with the Native American Graves Protection and Repatriation Act, the national monument is consulting with tribes to determine the cultural affiliation of human remains and funerary objects held in the museum collection at the monument. A NAGPRA action plan is needed for the monument to cover instances of the inadvertent discovery of American Indian human remains, funerary objects, sacred objects, or objects of cultural patrimony.

CULTURAL LANDSCAPES

Introduction

A cultural landscape is often expressed in the ways that land is organized and divided, and through such factors as settlement patterning, land use, circulation, and built environment. The character of a cultural landscape is defined by physical attributes such as roads, structures, and vegetation patterns, and by cultural attributes such as values and traditions.

Cultural landscapes are shaped by a variety of factors, including land use and land management, political and legal systems, and technology and economics. As such, they constitute a living record of an area's past—a visual chronicle of its history. Cultural landscapes are not static; modern and natural forces are continually

reshaping them, posing a significant preservation challenge.

Cultural landscapes can be broken into four broad categories: (1) historic sites—those that are significant for their association with a historic event, activity, or person; (2) historic designed landscapes—those that were consciously designed or laid out according to design principles or in a recognized style or tradition; (3) historic vernacular landscapes—those that evolved over time as a result of use or development and that reflect endemic traditions, beliefs, customs, or values; and, (4) ethnographic landscapes—those that are related to particular places or areas that contemporary peoples link to their traditional way of life and cultural heritage.

Resources at the Monument

Two landscapes have been formally defined. The northern landscape encompasses all of the North Unit, South Unit, and Heritage Addition of the national monument (NPS 2007a). The southern landscape encompasses the Sny Magill Unit (NPS 2007b). Both are categorized as "historic site" for their association with a historic event, activity, or person.

The entire landscape at Effigy Mounds National Monument may also fall into the ethnographic landscape category. It is linked to contemporary American Indians and associated closely with their cultural heritage, belief systems, and way of life. However, additional evaluation of the landscape and its associations with contemporary American Indians needs to be undertaken to determine whether this is the case.

With the advent of European settlement, the mounds that had survived centuries with little change began to disappear as lands were leveled for farming or town sites. Forested areas were cut down and erosion damaged many mounds that had survived the millennia. Mounds continue to be lost or damaged by development in the region. As mounds are damaged or destroyed, the mounds at the national monument become more important to preserve.

MUSEUM COLLECTIONS

Introduction

Museum collections are prehistoric and historic objects, artifacts, works of art, archival documents, and natural history specimens valuable for the information they provide about processes, events, and interactions among people and the environment.

Resources at the Monument

The museum collections support the interpretive themes of the national monument and assist in research and resource management programs. Approximately 34,800 items are in the collection; 29,500 of which are catalogued and approximately 5,300 remain to be catalogued at the time of this writing. The objects are overwhelmingly cultural in nature and categorized into archeological, ethnological, and historical collections. The national monument collections also include natural history categories on biology, paleontology, and geology associated with the origins of the national monument and its native flora and fauna.

The museum cultural collections and archives consist of artifacts, field notes, and manuscripts. Much of the collection was gathered by Ellison Orr (a central figure in the creation of a national park in Iowa and establishment of Effigy Mounds National Monument), and donated to the National Park Service. Some pieces of the collection are not directly related to excavations conducted within Effigy Mounds National Monument, but are significant for

comparison with collections gathered within the monument and elsewhere. Data gathered through excavations and surveys conducted since the national monument was established are housed within the visitor center.

Collections are used for exhibits, illustration of ideas and concepts in interpretive programs, research to understand the site's early inhabitants and environment, and for comparison with other similar collections elsewhere.

Museum collections are stored in the basement of the visitor center, which does not meet NPS standards for storage of museum collections. In 2012, the facility was found to be 75% compliant with NPS museum collections standards. The majority of the deficiencies could be addressed with increased staffing. Many of the remaining deficiencies could be addressed with facility improvements. However, due to basement location of the storage it would be difficult to ever fully meet NPS museum collections standards. Nonetheless, the location is above the 500-year floodplain of the Yellow and Mississippi rivers. Artifacts are contained in metal storage cabinets. Archives are kept in file cabinets and on bookshelves. Maps and drawings are kept in map files.

NATURAL RESOURCES

The varied topography at Effigy Mounds National Monument provides conditions in which a range of plant and animal communities flourishes, enabling early societies and cultures to develop and prosper.

SOILS

The principal soil type of the hilltop prairies is Fayette silt loam. It occurs in the uplands on benches along stream valleys. The light colored Fayette soil is well drained and has developed from loess (silty, windblown materials). In profile, the brownish gray silt loam surface soil is 4 to 8 inches thick with the yellowish brown silty clay subsoil extending down to about 28 inches (NPS 2000). A list of soil units within the boundaries of Effigy Mounds National Monument is found in the following table.

TABLE 8. SOILS

Name	Description
Boone loamy sand	On slopes ranging from 9%–18%
Caneek silt loam	Channeled, 0%–2% slopes, in floodplain of Yellow River; prime farmland only if drained and protected from flooding or not frequently flooded.
Dubuque silt loam	9%–18% slopes, some are moderately eroded. Farmland of statewide importance
Fayette silt loam	5%–40% slopes, some moderately eroded, farmland of statewide importance
Ion silt loam	0%–2% slopes, in floodplains
Lacrescent silt loam	25%–70% slopes, on slopes of bluffs
Lawson silt loam	0%–2% slopes; prime farmland only if drained and protected from flooding or not frequently flooded.
Medary silt loam	14%–25% slopes
Nordness silt loam	18%–40% slopes
Paintcreek silt loam	9%–30% slopes
Village silt loam	9%–18% slopes, some moderately eroded
Volney channery loam	5%–9% slopes
Yellowriver silt loam	14%–25% slopes
Zwingle silt loam	1%–9% slopes; farmland of statewide importance

Source: Soil Survey Geographic Database, Natural Resources Conservation Service

WILD AND SCENIC RIVERS

The Yellow River is listed in the *Nationwide Rivers Inventory*. The study that placed the river in the *Nationwide Rivers Inventory* found the Yellow River to be free flowing and to possess the following outstandingly remarkable values: scenery, recreation, geology, wildlife, history, and culture.

As part of this general management plan, the 3.5-mile segment of the Yellow River within the boundaries of the national monument was determined to be eligible and suitable for inclusion in National Wild and Scenic Rivers System (see appendix D for assessment).

VEGETATION

Vegetation on the wooded hills consists of a mix of hardwoods such as oak, maple, hickory, and basswood. The white oak grows on ridge tops in drier sites, and it was heavily used by farmers and landowners to construct barns, houses, wagons, and boats. Red oak trees grow on slopes with moist soil and can reach impressive sizes. Black oaks grow along the bluff edge while chinquapin oak can be found among the limestone outcroppings. Interspersed throughout the area are a variety of less common species, including ironwood, blue beech, and eastern red cedar. Many shrubs grow in the uplands, including hazelnut, gray dogwood, and prickly ash.

Indian grass, big bluestem, switchgrass, and little bluestem are predominate grass species of the tallgrass prairie at Effigy Mounds National Monument. Compass plant, butterfly weed, blazing star, goldenrods, asters, and purple and grey-headed coneflower add color to the open grasslands.

Various species of pondweed along with water milfoil, elodea, watershield, duckweed, arrowhead, bulrush, cattail, and wild rice populate the quiet backwaters and ponds of the monument. When present, filamentous and plankton algae are bioindicators that identify areas polluted with excessive nutrients.

The monument was created from the acquisition of private land that had been farmed and logged, altering the native vegetation mosaic. After 50 years of NPS protection, maturing stands of trembling and big-toothed aspen mark where the woods had been cleared. Sugar maple and basswood are now replacing the aspen. Sumac is found in the forest-prairie ecotone.

The Heritage Addition still appears to be heavily forested, but most of the merchantable timber was removed prior to acquisition by the National Park Service, causing forest succession to be set back.

The Sny Magill Unit is in a floodplain and is inundated annually by spring floods. The vegetation in this unit is dominated by silver maple, elm, and green ash. Swamp white oak is well represented in this unit.

Microhabitats

The combination of topography, longitude, latitude, and climate of northeast Iowa has produced unique microhabitats that support island populations of flora and fauna. These microenvironments include north-facing algific talus slopes and “goat prairies.’

Algific talus slopes are usually found on north-facing slopes. They are cold air seeps connected to crevices in the limestone bedrock, which are connected to underground caverns. The movement of cold air exiting the slope through the crevices creates a colder, moister environment down slope of the vent. This seepage of cold air creates microhabitat for groups of relict ice age plant communities.

These plant communities are remains of plant populations that are associated with more northern climates. As the glaciers advanced during the last ice age, plant communities that were adapted to northern climates moved south. With the warming of the climate and the retreat of the glaciers, the plants environmentally adapted to the cold climate moved north also. The modifying effect of the cold air seeps creates an artificially induced microclimate that maintains remnants of the prehistoric ice age plant communities (NPS 2000). Cold air seeps do exist in the monument, but it is not known if these are true algific talus slopes or if the associated flora and fauna species occur here.

Goat prairies are small prairie remnants found on bluff faces. These prairies are associated with shallow soil, south facing slopes, and rock outcrops. The south aspect, shallow soil, and drier conditions select the drought tolerant native grasses over woody vegetation, giving the prairie species a competitive advantage.

Locating, identifying, and monitoring of all special microhabitats are important for maintaining and protecting the pre-settlement ecological remnants. The greatest potential for the existence of federal listed threatened and endangered (T&E) species occurs in these areas. At present, the status of federal listed threatened or endangered species associated with these areas is unknown and the need for survey of these areas is important.

Nonnative Vegetation

Adverse effects to native populations occur from disruption and displacement by aggressive, nonnative species that have a competitive advantage or do not have natural controls. Asiatic honeysuckle, buckthorn, garlic mustard, multiflora rose, and purple loosestrife are nonnative species that have been identified in and around Effigy Mounds National Monument. If these nonnative species continue to multiply, they would outcompete and replace native species that have existed in this location for thousands of years. If allowed to multiply unchecked, aggressive nonnative species may eventually supplant native vegetation and replace it with a nonnative monoculture that does not supply adequate food or cover for local fauna.

NPS units that have nonnative species problems develop an integrated pest management program to identify and locate infestations of nonnative species, determine their impact on the resource, and develop strategies that would prevent, eliminate, or control the occurrence of undesirable species.

FISH AND WILDLIFE

Fish

Fish are found in the Mississippi River, Yellow River, Sny Magill Creek, and many of the smaller streams and creeks in the monument. A list provided by the U.S. Fish and Wildlife Service contains 118 species of fish known to occur in the Upper Mississippi River National Fish and Wildlife Refuge adjacent to the monument. The most common species are gizzard shad, common carp, emerald shiner, river shiner, bullhead minnow, and bluegill (USFWS 1991). There are reports of native trout in Dousman Creek. The fish species sampled in Sny Magill Creek have remained relatively constant through the years and are typical of Iowa cold water streams. Based on survey results, Sny Magill creek is dominated by a single species, the fantail darter (*Etheostoma flabellare*). In 2001, the first occurrence of slimy sculpin (*Cottus cognatus*), a cold water fish that is intolerant of environmental degradation, was noted in Sny Magill Creek (North Carolina State University 2001). Recreational fishing is

allowed in the monument, governed by state regulations.

Aquatic Invertebrates

Unionid mussels (freshwater clams) may be among the most endangered group of animals in North American waters. Unionid populations are declining due to a number of factors relating to habitat alteration and human interference. In Iowa, the decline is from habitat loss, siltation, pollution, and loss of larval host species (NPS 2000). The increased spread of nonnative species present in the Mississippi River (i.e., the zebra mussel), have placed additional stress on fragile populations, causing the loss of unionid species in many regions. Unionid mussels are present in the Yellow River and Johnson's Slough (adjacent to the Sny Magill Unit).

Birds

Almost 300 species of birds are known to nest or migrate through Effigy Mounds National Monument. The monument is on the Mississippi Flyway, one of the major bird migration routes on the continent. Each spring and fall, neotropical birds use the forested bluffs along the Mississippi Flyway for feeding and resting stopovers. Migrating raptors use the thermals rising from the bluffs on their biannual flight to and from nesting and wintering sites along the Mississippi Flyway.

Wetlands in the monument provide habitat for many resident and migratory birds. In spring and fall, wood ducks, mallards, Canada geese, and an occasional osprey are found feeding and resting in Founder's Pond. Canada geese, mallards, blue-winged teals, wood ducks, ruddy ducks, and swans are seen on or along the Mississippi River. Prothonotary and cerulean warblers inhabit the floodplain forest along the sloughs.

Colonies of great blue heron, great egrets, and double crested cormorants nest in colonial nest sites, or rookeries, in trees on the river islands. The rookeries are active in the spring when young fledgling birds are fed by their parents.

The bald eagle (*Haliaeetus leucocephalus*) potentially occurs statewide and is listed as breeding and wintering in Allamakee and Clayton counties. During the winter, this species feeds on fish in the open water areas created by dam tailwaters, the warm water effluents of power plants and municipal and industrial discharges, or in power plant cooling ponds. The more severe the winter, the greater the ice coverage and the more concentrated the eagles become. They roost at night in groups in large trees adjacent to the river in areas protected from the harsh winter elements. They perch in large shoreline trees to rest or look for fish to feed on. The bald eagle was federal listed as threatened, but was delisted by the U.S. Fish and Wildlife Service in 2007 due to population recovery.

Wild turkeys were once thought to be extirpated from the area but are now common in the monument. Peregrine falcons and red-shouldered hawks are also seen in the monument (see "Special Status Species").

Amphibians

The abundant wetlands in Effigy Mounds National Monument are habitat for numerous species of amphibians, including bullfrogs; American toads; and leopard, green, western chorus, spring peepers, and gray tree frogs.

Reptiles

The limestone bluffs unique to northeastern Iowa are home to a variety of reptiles. The black rat snake is the largest and most commonly seen snake in the monument. The brown, northern redbelly,

eastern garter, and prairie ringneck snakes are common, but, due to their small size, are difficult to find. The five-lined skink is the only lizard common to the monument. Several species of turtles inhabit the lowlands and marshy areas of the monument, including the painted turtle, map turtle, Blanding's turtle, and soft-shell turtles. Snapping turtles, reaching lengths of 15 inches and weighing 40 pounds or more, inhabit the Mississippi River and often take short forays inland.

Historically, the timber rattlesnake has been found in the region, although documented sightings have not taken place for many years. With the recent addition of 1,045 acres to the monument, the protection of suitable habitat for the timber rattlesnake is more likely. This, combined with the efforts to return the monument to a more prairie ecosystem, increases the likelihood of rattlesnakes once again colonizing secluded bluff tops.

Mammals

The Mississippi River, Yellow River, and adjacent wetlands provide the preferred habitat of many small mammals. Chipmunks, squirrels, beaver, muskrat, river otter, and mink occupy the quiet sloughs and river edges. Occasional sightings of gray fox (*Urocyon cinereoargenteus*) and coyote (*Canis latrans*) have been reported. Whitetail deer and red fox inhabit the floodplain and upland forests. Recently, an unnatural increase in population density of whitetail deer has been reported in the area.

Until the mid-1800s, northeast Iowa supported a small elk population. Elk disappeared from the region following European settlement. Likewise, the timber wolf was extirpated from the region by the 1930s. Isolated reports of wolves, black bear, and mountain lions have increased steadily over the past 10 years. Although it is suspected these sightings constitute the wanderings of young males, the rugged terrain may provide the right combination of habitat and seclusion to encourage these species to re-inhabit the region.

Nonnative Species

The zebra mussel is a fast-spreading species that was inadvertently introduced to this continent from Asia. They are established in the Great Lakes and have been found in the Mississippi River. Their presence disrupts lake and river ecosystems and clogs industrial equipment. It may be only a matter of time before the Mississippi River and its tributaries are severely affected by this quick-spreading species.

SPECIAL STATUS SPECIES

A list of federally threatened, endangered and candidate species for the Effigy Mounds National Monument general management plan was prepared by the U.S. Fish and Wildlife Service and forwarded to the National Park Service in a memorandum dated January 13, 2005 (appendix B). The list was rechecked March 19, 2012. The following species may occur in the vicinity of the monument:

Federal Listed Species
(E=Endangered, T=Threatened)

1. Higgins eye pearlymussel (E)
   Lampsilis higginsii
2. Iowa Pleistocene snail (E)
   Discus macclintocki
3. Prairie bush clover (T)
   Lespedeza leptostachya
4. Western prairie fringed orchid (T)
   Platanthera praeclara
5. Northern monkshood (T)
   Aconitum novaboracense
6. Bald eagle*
   Haliaeetus leucocephalus

* The bald eagle was in the memorandum, but has been subsequently delisted by the U.S. Fish and Wildlife Service.

State Listed Species. Information on state listed species was obtained from the Iowa Department of Natural Resources (IDNR 2005), was cross-referenced with species known to occur in the monument, and rechecked on March 19, 2012, to generate the list below. (F-Federal, IA-Iowa; E-Endangered, T-Threatened)

1. Higgins eye pearlymussel F-E, IA-E (*Lampsilis higginsii*)
2. Bald eagle F-Delisted, IA-E (*Halineetus leucocephalus*)
3. Peregrine falcon F-Delisted, IA-E (*Falco peregrinus*)
4. Gray wolf F-Delisted (*Canis lupus*)
5. Red-shouldered hawk IA-E (*Buteo lineatus*)
6. Bluff Veritigo IA-E (*Veritigo merimecensis*)
7. Spectaclecase IA-E (*Cumberlandia monodonta*)
8. Slough sandshell IA-E (*Lampsilis teres teres*)
9. Yellow sandshell IA-E (*Lampsilis teres anodontoides*)
10. Purple cliff break IA-E (*Pellaea atropurpurea*)
11. Yellow-eyed grass IA-E (*Xyris torta*)
12. Leathery grapefern IA-T (*Botrychium multifidum*)
13. Jeweled shooting star IA-T (*Dodecatheon amethystinum*)
14. Creeping juniper IA-T (*Juniperus horizontalis*)
15. Wild lupine IA-T (*Lupinus perennis*)
16. Purple fringed orchid IA-T (*Platanthera psycodes*)
17. Slender ladies'-tresses IA-T (*Spiranthes lacera*) IA-T
18. Southern bog lemming IA-T (*Synaptomys cooperi*)
19. Grass pickerel IA-T (*Esox americanus*)
20. Central newt IA-T (*Notophthalmus veridescens*)
21. Strange floater IA-T (*Strophitus undulates*)

Iowa Species of Special Concern

1. Hawthorn (*Crataegus pruinosa*)
2. Purple coneflower (*Echinacea purpurea*)
3. Prairie dock (*Silphium terebinthinaceum*)
4. Rough bedstraw (*Galium asprellum*)
5. Small white lady's slipper (*Cypripedium candidum*)
6. Summer grape (*Vitis aestivalis*)
7. Southern flying squirrel (*Glaucomys volans*)
8. Great Plains ladies'-tresses (*Spiranthes magnicamporum*)
9. Spotted coralroot (*Corallorrhiza maculate*)
10. Needle-and-thread (*Stipa comata*)

Animals

The Higgins eye pearlymussel *(Lampsilis higginsii)* is listed as endangered for the Mississippi River north of Lock and Dam 20, which includes Allamakee and Clayton counties, Iowa. This species prefers sand/gravel substrates with a swift current and is most often found in the main channel border or an open, flowing side channel. While there is no designated critical habitat, the Higgins Eye Recovery Team has designated habitats essential to the recovery of the species. These areas include Allamakee County, Iowa (river miles 655.8-658.4 Right); Harper's Slough area, Allamakee County, Iowa (river mile 639-641.4R); Marquette-McGregor area, Clayton County, Iowa (river mile 634-636);

McMillan Island area, Clayton County, Iowa (river mile 616.4-6 19.1R).
The endangered Iowa Pleistocene snail *(Discus macclintocki)* is found on north-facing slopes of the Driftless Area in Clayton County. It occupies algific talus slopes at the outlet of underground ice caves along limestone bluffs within a narrow regime of soil moisture and temperature. This snail is a relic of preglacial times; it was once widespread, but is now known only from a cave in Bixby State Preserve, approximately 20 miles southwest of the Sny Magill Unit. The snail's survival in a nonglaciated Driftless Area within the boundaries of the last four glaciations is so unique that the species was first described, and had long been known only, as a fossil. The existence of this snail depends on its requirement for a "fossil" climate at the mouth of the cave where temperature and humidity are relatively constant. Although the snail has not been found on the monument specific habitat conditions may exist in the area.

Plants

The prairie bush clover *(Lespedeza leptostachya)* is listed as threatened and considered to potentially occur statewide in Iowa, including Allamakee and Clayton counties. It occupies dry to mesic prairies with gravelly soil. There is no critical habitat designated for this species. This species should be searched for whenever prairie remnants are encountered.

The **western prairie fringed orchid** *(Platanthera praeclara)* is listed as threatened and considered to potentially occur statewide in Iowa, including Allamakee and Clayton counties. It occupies wet to mesic grassland habitats. There is no critical habitat designated for this species. According to the U.S. Fish and Wildlife Service, this species should be searched for whenever wet prairie remnants are encountered.

The **northern monkshood (***Aconitum novaboracense)* is listed as threatened in Allamakee and Clayton counties. It occupies north-facing, cold-seeping slopes in the Driftless Area of northeast Iowa and one slope along the Iowa River. There is no critical habitat designated for this species.

State Listed Species

Information on state listed species that may occur in the monument was provided by the Iowa Department of Natural Resources. The monument's resource specialist compiled a list of state listed species found in the monument (appendix E).

State Endangered Species

Red-shouldered hawks are fairly common in the monument and are most often seen soaring above the riverside bluffs. Their preferred breeding habitat is riparian forests and wooded swamps. Nests are built in coniferous trees 20 to 60 feet tall and are re-used several years in a row. Red-shouldered hawks are more able to tolerate human disturbance if there are mature trees and a high canopy available (Ehrlich, Dobkin, and Wheye 1988). The Yellow River floodplain has been identified as one of 12 nesting sites and one of two multiple nesting sites of the red-shouldered hawk in the state (NPS 2000).

The peregrine falcon (*Falco peregrine)* has an extensive natural distribution and is found on all continents except Antarctica. The American peregrine falcon breeds in Mexico, the United States, and Canada. Peregrines lay their eggs in "scrapes" in the soft earth on the floor of ledges and small, shallow caves located high on cliff walls (USFWS 2012). They prefer open land or open forests for foraging.

Peregrine falcons were endemic to the area with the last nesting pair reported in 1965 about 20 miles north of the monument. In 1998 and 1999, nineteen peregrines were

released at Effigy Mounds National Monument by the Raptor Resource Center of Bluffton, Iowa. The falcons were released from boxes placed at Hanging Rock. The intent was to release captive-bred birds on the cliffs of the Mississippi River and have them imprint on the limestone bluffs overlooking the river. It is hoped that some of the birds would return to the cliffs to set up territories and nest among the ancient sites along the river.

The bluff vertigo is a land snail that inhabits forested limestone or dolomite cliffs and outcrops. Common plant associations for this species in Iowa are scattered conifers, yew, and deciduous trees such as maples (NatureServe 2005).

State Threatened Species

Jeweled shooting star is a flowering plant of the primrose family. In the monument, it is found in three locations on limestone outcrops near bluff tops and moist cliff faces (IDNR 2005).

The slender ladies-tresses (*Spiranthes lacera*), a native orchid, was recently discovered in the North Unit. Flowers are tiny, less than 1/4 inch, white with a green throat, and are arranged in a large spiral around the flowering stalk. The number of spirals can vary greatly. It is found on sandy soils in dry meadows or sunny clearings in woods. In the monument, it has been found on restored fields. The extent of this plant in the monument is currently unknown.

State Species of Special Concern

The pugnose minnow (*Notropis emiliea)* is about 2 inches long and feeds on aquatic invertebrates. It is found in northern Mississippi River basins, usually in lowlands in clear to turbid, sluggish, often weedy waters of lakes, reservoirs, sloughs, swamps, and streams of all sizes (NatureServe 2005). It has been found near the Yellow River in the Heritage Addition (IDNR 2005).

VIEWSHEDS

Overlooks such as Fire Point and Eagle Rock provide the visitor with dramatic views of the Mississippi River Valley with its braided channels, wooded islands, and steep bluffs. As seen from bluff top viewpoints, the panorama of the Heritage Addition appears to be a seamless extension of the cultural and natural landscape represented within the monument.

The bluffs of the Mississippi River extend downstream (south) as far as the eye can see. Hawks soar above the wooded islands in the river's channel, and crows populate the bluff tops. In autumn, the forest presents a vivid display of color.

Signs of the modern age are few, consisting of a road, a bend of the railroad track, some farmland, and a few silos in the distance.

A procession of conical mounds lines a trail back into the woods looking west from the Mississippi River. Little Bear Mound and companion Great Bear Mound are a short distance from the river, and beyond that are more mounds of the conical and linear style. Visitors are able to contemplate these mounds in a primitive setting, without distractions of roads, parking lots, or other intrusions often encountered at archaeological sites accessible to the public.

A concern is the viewshed from the overlooks in the North Unit looking to the east. The view across the river is of Prairie du Chien, Wisconsin. Although mitigated somewhat by distance, reflective surfaces such as metal roofs can detract from the quality of the view under certain light conditions.

A regional pattern of development that evolved during the past decade indicates that there are probable future land use pressures on Effigy Mounds National Monument from outside its boundaries. Residential expansion is impacting the traditional farmlands and wooded lands surrounding the monument. The influence of these factors is only expected to increase during the upcoming years, resulting in increasing impacts to natural viewsheds.

VISITOR USE AND UNDERSTANDING

VISITOR EXPERIENCE

Effigy Mounds National Monument provides an opportunity for monument visitors to explore the remnants of a past culture that constructed hundreds of sacred earthen mounds, some in the shape of birds and bears. This window to the past also provides a modern link with 12 traditionally associated American Indian tribes that consider this place to have significant meanings. The monument protects and preserves over 200 intact mounds and their surrounding cultural and natural landscapes and provides an uncrowded atmosphere that enhances visitors' opportunity to understand and connect with these distinctive resources. It continues to be a challenge for monument staff to facilitate protection of archeological resources while providing opportunities for visitors to discover and connect with the historic human presence.

Visitors to Effigy Mounds National Monument can enjoy self-guided tours or join a ranger for a walk, talk, or historical demonstration. Hiking trails provide access to several areas with concentrations of preserved mounds. Visitors can also experience a unique variety of habitats, including upland forest, prairie, and wetlands. The views of the Mississippi River are scenic and provide visitors an opportunity to understand the complex web of protected areas adjacent to the national monument. Birding is becoming particularly popular due to the diverse habitats encompassed by Effigy Mounds.

The visitor center is open June to Labor Day from 8:00 a.m. to 6:00 p.m. every day; and, during other times of the year, weekdays 8:00 a.m. to 4:30 p.m. and weekends 8:30 a.m. to 4:30 p.m. The monument is closed Thanksgiving, Christmas, and New Year's days. Although people seem to locate the visitor center with little trouble, wayfinding signs outside the monument are few in number and in some cases placed in nonstandard areas.

Visitors are encouraged to begin their exploration of Effigy Mounds National Monument at the visitor center, where they can receive orientation and wayfinding information along with a schedule of special events and opportunities. They can also purchase interpretive material and books from the cooperating association bookstore, and view exhibits and a film about the monument's resources. After exploring the visitor center, many visitors proceed on the short trail to the three accessible burial mounds behind the visitor center and from there, to the main North Unit trail. Automobile access to the interior of the monument is not permitted.

The visitor center and support offices are currently fairly crowded some times of the year, which has some impact on visitors receiving appropriate orientation and interpretation. Some of the current interpretive media and orientation information does not adequately address the diversity of park themes and visitors.

For those wanting a more in-depth experience, the monument offers 14 miles of challenging hiking trails that crisscross the monument. Many visitors take advantage of the short, universally accessible, wetlands trail adjacent to the visitor center. For those with a little more time, rangers recommend the steep, 2-mile-long-loop trail, which leads to several burial and effigy mounds adjacent to Fire Point. The North Unit also offers a 7-mile-long trail providing access to more cultural and scenic areas. Longer hikes are available in the more secluded South Unit, known for its Marching Bear Group and outstanding prairie habitats.

Special events and activities are available throughout the year and include special ranger-led programs, bird walks, living history moonlight hikes, and cultural demonstrations. The largest special event is the "Hawk Watch Weekend," which attracts the greatest number of visitors every year in early fall. The monument also conducts viewings of park-related films in the winter.

Thousands of students visit the monument every year to participate in the curriculum-based education program. The monument's staff accommodates educational program requests on a reservation basis and can offer resources that facilitate teacher-led educational experiences within the monument. During inclement weather, the visitor center gets extremely crowded when student groups and other visitors are forced indoors.

The Sny Magill Unit of Effigy Mounds contains at least 106 mounds representing one of the largest concentrations of mounds in one location found in North America. Visitors have an opportunity to look through basic orientation information in a brochure available at the visitor center. Currently, vehicle access can be challenging with the low overhead clearance under the railroad track and the soft-surfaced trail. Many visitors come to this unit to fish and access the river at the state-maintained boat ramp.

The secluded nature and unique resources of Effigy Mounds National Monument invite visitors to not only gain a deeper awareness of the cultural landscape, but to also explore one of the few preserved and still wild areas in this part of the country. The combination of a centralized point for orientation and the ability to then extend a visit onto easy trails or strenuous hikes offers abundant opportunities for many, diverse experiences.

Effigy Mounds National Monument is 65 miles south of La Crosse and 105 miles west of Madison, Wisconsin. A large number of visitors access the monument through Prairie du Chien, Wisconsin via US Highway 18 or via Iowa state highway 76, which is a segment of The Great River Road.

Visitor Use

Effigy Mounds National Monument is purely a day use area. The majority of visitors initially utilize the visitor center and its adjacent trails, but some expand their explorations to the other trails within the monument. Other recreational users utilize the Yellow River or the Mississippi River adjacent to the monument to boat and fish. About 16,000 fishing visitors were counted in 2007.

Most visitors are locals who live within a 3- to 4-hour drive, some of whom bring out-of-area visitors on a recurring basis. Approximately 40% of visitation happens in the summer, with the majority of winter visitation occurring during the annual winter film festival. Subjectively, visitation patterns appear to be changing with the busiest month no longer being October, but occurring toward the end of summer. The monument does attract a number of international visitors as well.

Prior to 2004, Sny Magill visitation was not recorded in annual statistics, which partially accounts for the jump in recreational visitation in 2004 (table 9).

Table 9. Effigy Mounds Visitation Figures

Year	Recreational Visits	Visitor Center
2011	83,861	52,215
2010	80,883	47,435
2009	79,378	42,990
2008	69,895	37,997
2007	88,268	47,567
2006	91,175	50,196
2005	89,746	48,121

TABLE 9. EFFIGY MOUNDS VISITATION FIGURES

Year	Recreational Visits	Visitor Center
2004	96,189	52,154
2003	80,859	52,502
2002	76,260	49,811
2001	81,045	51,411
2000	78,762	50,163

Source: Effigy Mounds National Monument

VISITOR UNDERSTANDING

Visitor understanding of the monument's resources and their inherent meanings is facilitated through effective interpretation and education programs. Interpretive services include both personal services (rangers greeting visitors at the visitor center) and nonpersonal services like the wayside exhibit that describes the people who built the mounds and their culture. Interpretation is made more effective by giving visitors adequate orientation and wayfinding guidance, both in and outside the monument.

The current personal and nonpersonal opportunities provided for visitors to Effigy Mounds National Monument are successful in facilitating visitor understanding. However, an expansion and/or reorganization of the visitor center and an increase in interpretive staff would be an effective way to increase visitor understanding and enjoyment, thus promoting greater park stewardship.

The majority of visitors start their experience in the visitor center where they can contact a ranger, sales person, or volunteer; watch the 15-minute orientation program; and enjoy the exhibits. In addition to these interpretive experiences, visitors also can receive directions and other wayfinding information. As they move out into the resource, they receive other interpretive messages via guides, ranger activities and talks, wayside exhibits, and printed material like site bulletins. These also provide a knowledge base for those who wish to explore the more strenuous and/or secluded hikes. Educational groups receive personal guided experiences, as staff is available. Environmental study guides and materials are available for on-site and previsit education.

VISITOR SAFETY AND ACCESS

When hiking in the monument, visitors are cautioned to be aware of the weather as summer can be very hot and humid and winters can be cold and snowy. Trails are occasionally closed due to hazardous conditions. Summer heat and humidity can cause heat-related illness.

The only access to the South Unit trail system involves crossing the highway adjacent to the monument boundary, which can be hazardous due to limited sight distance and heavy traffic moving at a high rate of speed. Alternatives to this situation are currently being discussed.

Visitors are oriented to the need for fitness and self-sufficiency when exploring the monument's trail system. The elevation changes can be challenging while uneven and possibly slippery trail surfaces are common. The chance of meeting other people or employees on these trails can be minimal. Thus, there is a need to be self-sufficient.

Many of these hazards are partially mitigated by adequate orientation at the visitor center and information from the monument's website and interpretive handouts.

The visitor center offers enhanced access options along with an accessible restroom and exhibit area. The boardwalk trail also offers an accessible hike for those visitors who might find other trails too challenging.

Other trails in the monument are, for the most part, uneven and primitive due to the nature of the site.

RECREATIONAL USE OF THE YELLOW RIVER

The National Park Service recognizes there is historic and current recreational use on the Yellow River inside and outside the monument boundaries. This use includes fishing, canoe and kayak paddling, and motor boating. The use of motorboats is associated with fishing and is estimated by the monument staff to be quite low.

No hunting is allowed in the monument and fishing is governed by state regulations. Because it is a navigable river, the State of Iowa has some management authority for the water and its use.

Approximately 3.5 miles of the river flow through monument lands before joining the Mississippi River near the monument headquarters. The Yellow River is a backwater for the Mississippi here and is quite sluggish for the last 3.5 miles. Upstream of the monument, the river flows quite fast for Iowa and, therefore, is attractive to paddlers.

An area along the river near Iowa 76 has been used as an unauthorized canoe take-out for many years. Safety concerns about the steep banks and vehicles moving into and out of the highway have prompted the National Park Service to close this take-out area. Also, part of the take-out area is on private land where the National Park Service has no authority to make any improvements. Paddlers have access to public put-in and take-out points upstream of the monument and at a site on the Mississippi River just below the mouth of the Yellow River.

SOCIOECONOMIC ENVIRONMENT

SOCIOECONOMIC BENEFITS OF THE NATIONAL PARK SERVICE

- National parks generate more than $4 in value to the public for every tax dollar invested.
- Nationwide, the national parks support $13.3 billion of local private-sector economic activity and 267,000 private-sector jobs.
- National parks attract businesses and individuals to the local area, resulting in economic growth in areas near parks that is an average of 1% per year greater than statewide rates over the past three decades.
- The social benefits of national parks are many and extend well beyond economic values (Hardner and McKenney 2006).

A trend that has affected most units of the National Park Service in the past several years is a decrease in visitation. Of particular note is the apparent decrease in interest by the nation's young people.

ECONOMICS IN THE STUDY AREA

For the purposes of this document, the study area (area of consideration) for socioeconomic analysis is Clayton and Allamakee counties, Iowa, and Crawford County, Wisconsin. Although all the monument units are in Iowa, the City of Prairie du Chien, Wisconsin, is socially and economically linked to the monument because of its proximity and availability of visitor services (e.g., restaurants, hotels, and auto service stations).

Allamakee County, Iowa

The headquarters, visitor center, and most of the monument are located in Allamakee County. Waukon, Harpers Ferry, and other small, rural communities form the population base of this county. The U.S. Census Bureau estimates that the county's population was 14,709 in 2005. The population increased by 6.1% in the preceding 15 years (1990–2005). The state of Iowa experienced an increase of 6.8% in population over the same period. The average number of persons per square mile in the county was 23 in 2000, while the statewide average was 52.

The median household income in Allamakee County in 2010 was $46,623 while the median for Iowa was $47,961. The per capita income in 2010 was $21,349 while the figure for the state was $24,883. According to the 2000 employment figures provided by the U.S. Census Bureau, the economy of Allamakee County is based on manufacturing; education, health and social services; agriculture (including forestry, fishing, hunting, and mining); and retail trades.

Federal spending from all sources in Allamakee County totaled $77.416 million in 2004.

Clayton County, Iowa

The Sny Magill Unit and most of the South Unit are located in this county along with Marquette, McGregor, and other communities. The U.S. Census Bureau indicates that the county's population was 18,337 in 2005. The population decreased by 3.8% in the preceding 15 years (1990–2005). The State of Iowa experienced an increase of 6.8% in population over the

same period. The average number of persons per square mile in the county was 24 in 2000, while the statewide average was 52.

The median household income in this county in 2010 was $45,873 while the median for Iowa was $47,961. The per capita income in 2010 was $22,303 while the figure for the state was $24,883. Based on the 2000 employment figures, the economy of Clayton County is centered around manufacturing; education, health, and social services; agriculture (including forestry, fishing, hunting, and mining); and retail trades (U.S. Census Bureau).

Federal spending from all sources in Clayton County totaled $108.715 million in 2004.

Crawford County, Wisconsin

The City of Prairie du Chien (population 6,018) and several smaller towns lie within this county. The U.S. Census Bureau indicates that the county's population was 17,134 in 2005. The population increased by 7.6% in the preceding 15 years (1990–2005). The State of Wisconsin experienced an increase of 12.8% in population over the same period. The average number of persons per square mile in Crawford County in 2000 was 30, while the Wisconsin statewide average was 99.

The median household income in the county in 2010 was $39,486 while the median for Wisconsin was $49,001. The per capita income in 2010 was $26,334 while the figure for the state was $25,458. According to U.S. Census Bureau employment figures, Crawford County is economically based in manufacturing; education, health, and social services; retail trades; and a combination of agriculture, forestry, fishing and hunting, and mining.

Federal spending from all sources in Crawford County totaled $97.996 million in 2004.

VISITOR SPENDING IN THE PLANNING AREA

Effigy Mounds National Monument hosted 91,175 recreation visits in 2006, the latest year of complete data. According to a visitor study conducted by the National Park Service in 2005, 93% of visitors were on day trips and 7% were on overnight trips staying in motels or bed and breakfast facilities, or camping in the area.

The results of the visitor study were used with the NPS money generation model to calculate the level of economic effect visitor spending has in the area. For analysis, the total recreation visits were converted to 36,470 party days in the local area (party days = number of days spent in the vicinity by a party of visitors). On average, visitors spent $60 per party per day in the study area. Total visitor spending was $2.18 million dollars in 2006 (table 10). This includes spending in sales, income, and jobs in businesses selling goods and services directly to park visitors.

The direct effects of the $2.18 million spent by visitors to the national monument were $1.59 million in sales, $564,000 in personal income (wages and salaries), $875,000 million in value added, and 39 jobs supported. Large direct effects were $445,000 in food and drinking places, $312,000 in retail trade and $68,000 in the hotel sector. As visitor spending circulates through the local economy, an additional $480,000 in sales, $161,000 in personal income, $295,000 in value added, and six jobs were created in secondary effects (table 11).

The total effects figures shown in table 10 are the sum of the following:

- direct effects accrued largely to tourism-related business in the area
- indirect effects accrued to a broader set of economic sectors that serve these tourism businesses

- induced effects that are impacts of household expenditures from income earned in a directly or indirectly affected industry

TABLE 10. VISITS AND SPENDING BY VISITOR SEGMENT, 2006

	Day Trips	Hotel	Camping	Total
Recreation Visitors	84,763	4,559	1,823	91,175
Segment Shares in Rec. Visits	93%	5%	2%	100%
Visitor Party Days	33,918	1,824	729	36,471
Avg. Spending Per Party Day	$ 55	$ 147	$ 87	$ 60
Total Spending	$923,000	$268,000	$64,000	$2,178,000

Source: NPS Public Use Statistics Office Money Generation Model

TABLE 11. ECONOMIC EFFECTS OF VISITOR SPENDING BY SECTOR, 2006

Sectors	Sales	Personal Incomes	Jobs	Value Added
Direct Effects				
Motels, Hotels, B&Bs and Cabins	$ 68,000	$ 20,000	2	$ 30,000
Campgrounds	$ 6,000	$ 1,000	0	$ 2,000
Restaurants & Bars	$445,000	$140,000	12	$195,000
Admissions	$492,000	$169.000	13	$277,000
Retail	$312,000	$159,000	10	$248,000
Others	$262,000	$ 75,000	2	$123,000
Total	$1,585,000	$564,000	39	$875,000
Secondary Effects	$480,000	$161,000	6	$295,000
Total Effects	$2,065,000	$725,000	45	$1,170,000

Source: NPS Public Use Statistics Office Money Generation Model

MONUMENT OPERATIONS AND FACILITIES

The staff of Effigy Mounds National Monument is responsible for managing the cultural and natural resources on 2,526 acres of national park system land and accommodating about 80,000 visitors each year. The base funding was approximately $1.2 million in fiscal year 2010. At one time, the monument collected entrance fees during the summer months, but no longer does.

There are 17 full-time-equivalent employees (FTEs) at Effigy Mounds National Monument, who provide interpretation and education, resource management, administration, facility management, and law enforcement at the four units. This does not mean that there are 17 employees, as FTE is not a measurement of the number of people but is a measurement of "equivalency"—two part-time employees could equal one FTE. Seasonal employees, cooperating association employees, and volunteers assist the permanent staff in some of these duties.

Monument staff provide interpretation and education programs centered around the visitor center and major trails in the North Unit. The visitor center is staffed at all times the monument is open (362 days a year). Interpreters conduct visitor programs such as talks or guided walks as well as roving interpretation on the major trails during the primary visitor season. The administrative staff keeps everything running and tracks the budget. One part-time law enforcement ranger provides needed law enforcement. Permanent and seasonal natural resource staff perform resource restoration actions and conduct monitoring of sensitive resources.

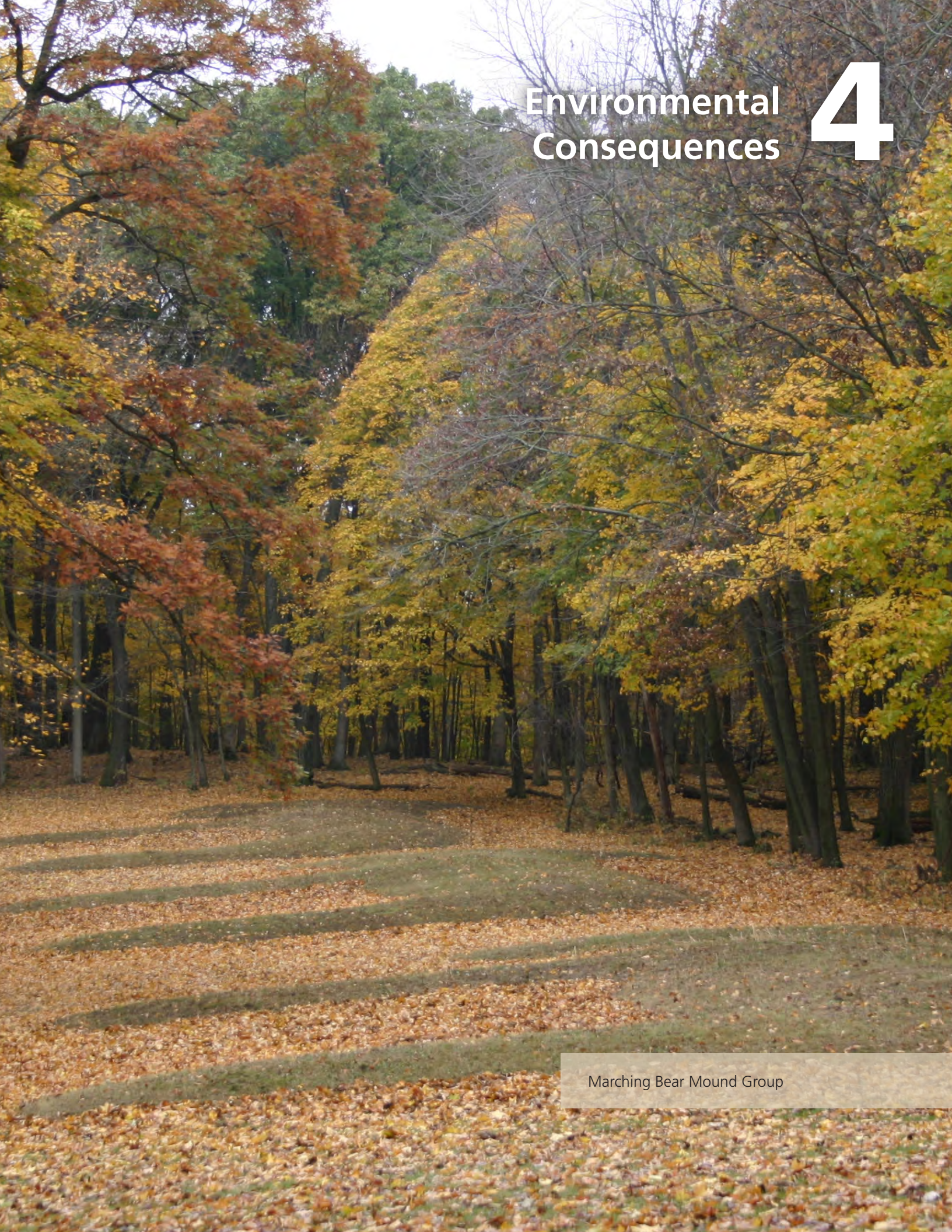
All units are open for day use only, although not physically closed at night.

In addition to the visitor center and office buildings, NPS staff members are responsible for maintaining access roads, a maintenance facility, paved parking lot, trails, former employee residences that have been converted to office space, and utilities.

The greatest outdoor maintenance workload is around the visitor center and in the North Unit where the largest proportion of visitation occurs. Work in the North Unit requires transporting equipment and supplies from the maintenance yard located near the visitor center. There are two maintenance access roads in the North Unit that facilitate the movement of personnel and equipment closer to the trail where work is done.

The Sny Magill Unit is more than 10 miles away from the maintenance yard, so crews must travel to do work at this unit. A fence and footpath need occasional maintenance. Stabilization of the riverbank and protective maintenance of the mounds is ongoing. Iowa Department of Natural Resources maintains the access road, parking area, and boat ramp in this unit. There are no visitor services or regular NPS presence at this unit.

Environmental Consequences 4



Marching Bear Mound Group

INTRODUCTION

The National Environmental Policy Act requires that environmental documents include discussion of the environmental impacts of a proposed federal action, feasible alternatives to that action, and any adverse environmental effects that could not be avoided if a proposed action should be implemented. In this case, the proposed federal action is implementation of the *Final General Management Plan / Environmental Impact Statement for Effigy Mounds National Monument*. This chapter contains the analysis of the environmental impacts on cultural resources, natural resources, visitor experience, social and economic environment, and national monument operations, and that would result from the actions of each of the three alternatives. The analysis is the basis for comparing the beneficial and adverse effects that would be caused by implementing each alternative.

Because the actions described in the alternatives are general and conceptual, the impacts of these actions are analyzed in general qualitative terms. Thus, this environmental impact statement should be considered a programmatic analysis. If and when site-specific developments or other actions are proposed for implementation after the final general management plan is published and approved, appropriate detailed environmental and cultural compliance documentation would be prepared in accordance with the requirements of the National Environmental Policy Act and the National Historic Preservation Act.

Each alternative discussion also describes cumulative effects and presents a conclusion. At the end of the impact section, there is a brief discussion of the unavoidable adverse impacts, irreversible and irretrievable commitments of resources, the relationship of short-term uses of the environment and the maintenance and enhancement of long-term productivity, and the energy requirements and conservation potential. The impacts of each alternative are briefly summarized in table 7, at the end of "Chapter 2: Alternatives, Including the Preferred Alternative."

TERMS AND ASSUMPTIONS

Each impact topic includes a discussion of impacts, including the context, intensity, duration, and type of impact. Intensity of impact describes the degree, level, or strength of an impact as negligible, minor, moderate, or major. Because definitions of intensity vary by resource topic, separate intensity definitions are provided for each topic. *Contexts* for impacts are described as local (confined to a localized area), monumentwide (occurring throughout the monument or in multiple locations within the monument), or regional. *Duration* of impact considers whether the impact would occur over the short term, long term, or (in the case of cultural resources) permanent. Unless otherwise noted, short-term impacts are those that, within a short period of time—generally one year or less—would no longer be detectable because the resource or value would return to its predisturbance condition or appearance. Long-term impacts refer to a change in a resource or value that are expected to persist for more than one year. Permanent impacts to cultural resources are irreparable. The *type* of impact refers to whether the impact on the resource or value would be beneficial or adverse.

The impact analyses for the action alternatives (alternatives B and C) describe the difference between implementing alternative A (no-action alternative) and

implementing the action alternatives. In other words, to understand the consequences of any action alternative, the reader must also consider what would happen if current management practices were to continue.

CUMULATIVE IMPACTS

CEQ regulations also require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of who undertakes such other actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively important actions taking place over time.

Cumulative impacts are considered for all alternatives. To determine potential cumulative impacts, other projects within and surrounding Effigy Mounds National Monument were identified. Projects were identified by discussions with the monument, federal land managers, and representatives of county and town governments. Potential projects identified as cumulative actions included any planning or development activity currently being implemented, or that would be implemented in the reasonably foreseeable future. The CEQ regulations do not require bureaus to catalogue or exhaustively list and analyze all individual past actions. Other actions were considered in the analysis only if they are relevant and useful because they have a significant cause-and-effect relationship with the direct and indirect effects of the proposed alternatives.

These actions were evaluated in conjunction with the impacts of each alternative to determine if they would have any cumulative effects on a particular natural, cultural, or socioeconomic resource or visitor use. For those cumulative actions that were in the early planning stages, the qualitative evaluation of cumulative impacts was based on a general description of the project.

Past Actions

Many mound groups outside the monument boundaries have been destroyed by agricultural practices and other types of land uses. Designation of Effigy Mounds National Monument in 1949 and expansion of the monument in 1961 and 2000 set aside over 2,500 acres for protection of the burial mounds, associated natural resources, and historic sites. In addition, during the early development of the monument's infrastructure, construction may have damaged deposits containing archeological materials. However, it should be noted that even though upper levels of deposit may have been damaged, there still may be undisturbed deposits beneath the construction zone.

Present Actions

Rural residential development has been slowly increasing in Clayton and Allamakee counties in Iowa. In some cases, large farms are being subdivided and sold as "ranchettes." This is occurring near the monument's north boundary along Highway 76. Natural viewsheds have been affected by commercial and industrial development across the Mississippi River in Prairie du Chien, Wisconsin, where reflective surfaces (e.g., roofs) detract from the view. Rock and gravel mining operations also are affecting views from the North Unit and the approach to the Sny Magill Unit.

The Mississippi River Trail is a multistate effort to create a continuous bike and hike trail along the length of the Mississippi River from Wisconsin to Louisiana. The National Park Service supports this effort; Effigy Mounds National Monument could

be a destination point. However, bicycles are not allowed on monument trails.

Future Actions

Although the current agricultural land use on most property adjacent to the monument is compatible with the monument's goals, it can be assumed that this agricultural use would continue to be replaced with residential development and subdivisions. This assumption is based on current land development trends in the area around the monument. Of particular concern is the possible change in land use on the private land adjoining the monument.

CULTURAL RESOURCES

TYPES OF CULTURAL RESOURCES

Cultural resources typically include *archeological resources, cultural landscapes, prehistoric and historic structures, ethnographic resources*, and *museum collections*. This analysis focuses on four of these types of cultural resources and specifically those listed in or eligible for listing in the National Register of Historic Places. Structures are not included in the analysis because there are no structures within the monument that are eligible for listing in the national register. For the purpose of this analysis, mounds, historic roads, historic cistern, and sawmill remnants are considered archeological resources, not structures.

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT METHODOLOGY

In this management plan, impact analysis also must comply with the requirements of section 106 of the National Historic Preservation Act. In accordance with Advisory Council on Historic Preservation regulations implementing section 106 of the National Historic Preservation Act (36 CFR Part 800, *Protection of Historic Properties*), impacts on cultural resources were also identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected national register-eligible or national register-listed cultural resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the advisory council's regulations, an *adverse effect* occurs whenever an action alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register of Historic Places, e.g., diminishing the integrity (or the extent to which a resource retains its historic appearance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by alternative actions that would occur later in time, be further removed in distance, or be cumulative (36 CFR 800.5, *Assessment of Adverse Effects)*. A determination of *no adverse effect* means there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the national register.

CEQ regulations and NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* call for a discussion of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g., reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under the National Environmental Policy Act only. It does not suggest that the level of effect as defined by section 106 is similarly reduced. Cultural resources are nonrenewable resources, and adverse effects generally consume, diminish, or destroy the original historic materials or form, resulting in a loss in the integrity of the resource that can never be recovered. Therefore, although actions determined to have an adverse effect under section 106 may be mitigated, the effect remains adverse.

A section 106 summary is included in the impact analysis sections for cultural resources following the conclusions of each cultural resource impact topic. The section 106 summary is an assessment of the effect of the undertaking (implementation of the alternative) based upon the criterion of effect and criteria of adverse effect found in the advisory council regulations.

ARCHEOLOGICAL RESOURCES

Archeological resources are addressed in this section because many of the proposed actions in the alternatives could affect these resources. The impacts on archeological resources in the action alternatives (alternatives B and C) were evaluated by comparing projected changes resulting from the action alternatives to the no-action alternative.

Intensity Thresholds

The thresholds to determine the level of impact on archeological resources are defined as follows:

Negligible—Impact is at the lowest level of detection with neither adverse nor beneficial consequences. Impacts would be measurable, but with no perceptible consequences. For the purpose of section 106, the determination of effect would be *no adverse effect*.

Minor—Disturbance of a site results in little, if any, loss of integrity. The determination of effect for section 106 would be *no adverse effect*.

Moderate—Site is disturbed, but not obliterated. The determination of effect for section 106 would be *adverse effect*.

Major—Site is obliterated. The determination of effect for section 106 would be *adverse effect*.

Impacts Common to All Alternatives

Archeological Inventories. The surveys and research necessary to determine the eligibility of archeological resources for listing in the National Register of Historic Places are a prerequisite for understanding the resource's significance, as well as the basis of informed decision making in the future regarding how such resources should be managed. Completion of such surveys and research would result in a parkwide, long-term, beneficial impact.

Ground Disturbance. Ground disturbance activities under this impact topic include actions that would result in damage to archeological resources that reduces or destroys resource integrity of characteristics making the resources eligible for listing in the national register. These activities could include visitor-related activities such as foot traffic and pothunting, as well as more construction-related activities like trail development or realignment, alteration of existing roads, facility construction, riverbank stabilization, and mound maintenance.

Visitor Use / Foot Traffic—The public would continue to be asked to stay on the trail systems throughout the national monument and to stay off the mounds. However, some visitors would continue to climb up the mounds, or may climb on them because of wet ground conditions in areas adjacent to mounds. New areas of the national monument do not have trails, and visitors might unknowingly walk on unmarked mounds. This occasional activity could result in erosion of the mound that, if left unchecked, could result in damage or even loss of a mound's integrity. The monument's policy of ranger patrols and emphasis on visitor education would continue to discourage visitors from straying from marked trails, committing acts of vandalism, and causing inadvertent destruction of cultural remains. Adverse

impacts would be local, minor to moderate, and permanent.

Mississippi River Bank Stabilization—Each alternative would continue the current practice of stabilizing segments of the Mississippi River banks to protect the Sny Magill mounds. Exposed deposits could be documented and covered with a protective material (e.g., filter fabric) prior to adding clean fill and/or riprap to stabilize the banks. Stabilizing the riverbanks would decrease or eliminate bank erosion that could threaten archeological deposits. This would result in a local, long-term, beneficial impact.

Mound Maintenance—A cultural landscape report would be prepared in the near future to prescribe specific recommendations for mound maintenance, and what follows is based on what the National Park Service's best assumptions are for what that report may recommend.

Some of the mounds would continue to have trees growing on them. Large trees would be left intact when damage from their removal would jeopardize the integrity of the mound. Saplings would continue to be removed. Trees on mounds would continue to occasionally die or be blown down. A dead tree would continue to be cut down at the base and left to deteriorate. Trees that are blown down would continue to be removed in a manner least damaging to the mound. However, both would continue to result in some damage to the mound. As roots decay, the soil would continue to collapse in upon itself and archeological deposits in the mound could lose integrity of shape and height. In either case, maintenance staff would continue to fill holes with clean fill material (free of cultural materials) and revegetate the site under the supervision of qualified cultural resource specialists.

Pothunting—Although rare, deliberate acts of excavation for artifacts (called pothunting) could continue to occur. These activities would result in damage to the mounds and possibly loss of archeological artifacts that would be integral to an understanding of the mounds and the cultures that constructed them. This type of damage could create local, permanent, and minor to moderate, negative impacts. Damage from pothunting would be dealt with similarly to mound maintenance.

Dead and blown-down trees would result in local, permanent, minor to moderate adverse impacts. Stabilizing disturbed sites with clean fill and revegetating the sites would reduce the intensities of these adverse effects because the mounds would retain their shape and appearance and because stabilization would deter erosion.

Cumulative Impacts. Over the years, archeological resources in the region have been damaged due to ground disturbance associated with agriculture, residential development, and logging. Pothunting has also resulted in the loss of archeological resources, alteration of artifact distribution, and a reduction of contextual evidence. In addition, during the early development of the monument's infrastructure, construction resulted in damage to surface deposits containing archeological materials. Adverse impacts resulting from these past actions have been moderate to major and permanent.

As described above, impacts common to all alternatives would result in permanent minor to moderate, localized, adverse impacts. These impacts, in combination with the impacts of other past, present, and reasonably foreseeable future actions, would result in a permanent, moderate, adverse, cumulative effect. However, many potential adverse impacts of the alternatives would be confined to small, localized areas or would be somewhat offset by beneficial impacts.

The adverse effects associated with the impacts common to all alternatives would

be a small component of the adverse cumulative impact.

Conclusions. In each alternative, visitor use (including pothunting), bank stabilization along the Mississippi River, and maintenance of the mounds would have permanent, local, minor to moderate, adverse impacts to archeological resources. These impacts could be reduced to negligible to minor through avoidance, mitigation, and construction design. A complete inventory of the monument and continued preservation of the mounds and their contents would have a long-term, beneficial impact on archeological resources throughout the monument.

Section 106 Summary. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that the actions common to all alternatives would have *no adverse effect* on archeological resources.

Impacts from Implementing Alternative A

There are specific actions relating to trail maintenance and realignment in alternative A that could require some level of archeological inventory and evaluation work. Trail maintenance and realignment would be guided by a cultural landscape report and recommendations currently under development, a future public access/ trail development plan, and a long-range interpretation plan.

Ground Disturbance. Existing trails would continue to be maintained. Maintenance activities would be confined to already disturbed areas. The potential for negative impacts to archeological resources would be long-term, negligible, and localized.

Some existing trails might be relocated for resource protection and visitor enjoyment. Prior to relocating trails, a predevelopment archeological survey of the proposed realignment would be undertaken to ensure significant archeological sites or features would be avoided.

Cumulative Impacts. Over the years, archeological resources in the region have been damaged due to ground disturbance associated with agriculture, residential development, and logging. Pothunting has also resulted in the loss of archeological resources, alteration of artifact distribution, and a reduction of contextual evidence. In addition, during the early development of the monument's infrastructure, construction resulted in damage to surface deposits containing archeological materials. Adverse impacts resulting from these actions have been moderate to major and permanent.

As described above, impacts associated with the implementation of alternative A would result in permanent, minor to moderate, adverse impacts. These minor to moderate adverse effects, in combination with the impacts of other past, present, and reasonably foreseeable future actions, would result in a permanent, moderate, adverse cumulative effect. But, most adverse impacts would be confined to small, localized areas or would be somewhat offset by beneficial, ~~i~~mpacts. The adverse effects associated with implementation of alternative A would be a small component of the adverse cumulative impact.

Conclusion. Trail maintenance would occur in previously disturbed areas. Trails would be realigned to avoid significant archeological resources. These actions could lead to local, negligible to minor, adverse impacts that would be permanent.

Section 106 Summary. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that the impacts resulting from

actions in alternative A would have *no adverse effect* on archeological resources. Consultations with the state historic preservation officer and consulting tribes would occur to develop mitigation strategies.

Impacts from Implementing Alternative B or Alternative C

As they pertain to archeological resources, alternatives B and C are the same except for one difference—under alternative B, the existing trail in the Sny Magill Unit would be improved from the parking lot to the first set of mounds, and under alternative C, the entire trail would be upgraded.

There are specific actions under both alternatives relating to trail development, construction, and land that could require some level of archeological inventory and evaluation work. Trail development would also be guided by the cultural landscape report and recommendations currently under development.

Ground Disturbance. Ground disturbing actions that could require some level of archeological evaluation work prior to implementation include the following:

Trail Development/Removal—Prior to construction, the trail routes would be designed to avoid known archeological resources. If during construction, previously unknown archeological resources were discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented by a professional archeologist; if the resources could not be preserved in situ, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and associated American Indian tribes. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act would be followed.

Alternatives B and C would propose several ground disturbing actions involving existing and new trails as well as the removal of roads. These projects would include

- Yellow River bridge new trail connection to South Unit trail system
- Heritage Addition Development of Old Roads as Trails/Trails Development
- Heritage Addition New Trail Construction
- Fire Point and Other North Unit Trail Realignments
- South Unit Trail Realignments
- Sny Magill Unit Trail Construction
- Removal of Old Roads

Trail routes would be surveyed for archeological resources prior to trail construction. This would include the portion of the Sny Magill trail from the parking lot to the first set of mounds under alternative B and the entire length of the current trail under alternative C. Trails and the placement of any associated wayside exhibits and signs would be designed to avoid impacting archeological resources or would be located in areas that would minimize negative impacts to resources. Any adverse impacts would be minor, local, and permanent.

Prior to any road obliteration, roads would be evaluated for any association with significant archeological resources. Although the roadbeds are disturbed areas, there would be a potential for significant subsurface deposits to remain intact beneath or adjacent to the disturbed areas. Archeological surveying or monitoring would be carried out during ground disturbing activities to ensure intact

deposits were avoided to the greatest extent possible. These actions would result in negligible to minor, localized, adverse impacts that would be permanent.

Trails systems within the monument would encourage visitors to stay on established paths. This would reduce foot traffic damage to mounds and other archeological resources, thus resulting in a long-term, monumentwide, beneficial impact.

Infrastructure Construction—Alternatives B and C would propose constructing a visitor contact station at the Sny Magill Unit. This would improve the monument's infrastructure and enhance visitor services. Prior to the construction project, the construction site would be surveyed and assessed for significant archeological deposits.

To the extent possible, the proposed construction would be located and designed to avoid archeological deposits. This would result in adverse impacts that would be negligible to minor, localized, and permanent.

Stabilization of Fire Point Mound in the North Unit—Stabilizing and restoring the mound's original dimensions would require additional soil to recreate the previous mound outline. Soil from outside the national monument, free of cultural materials, would be used. The existing mound deposits would not be disturbed. All stabilization work would be conducted and documented by a qualified professional archeologist. Stabilizing the mound would prevent further erosion and restore the mound's appearance, resulting in a local, long-term, beneficial impact.

Land Acquisition. Alternatives B and C would call for acquiring the Riverfront Tract located within the monument's authorized boundary from willing sellers. After acquiring this tract, the monument would inventory any archeological resources on the properties and determine if any meet the significance criteria for listing in the National Register of Historic Places. Identifying and evaluating these resources would inform monument staff regarding the best manner to manage and protect these resources. In addition, park rangers would also have jurisdiction to protect these resources under federal preservation laws. These actions would result in local, long-term, beneficial effects.

Cumulative Effects. Over the years, archeological resources in the region have been damaged due to ground disturbance associated with agriculture, residential development, and logging. Pothunting has also resulted in the loss of archeological resources, alteration of artifact distribution, and a reduction of contextual evidence. In addition, during the early development of the monument's infrastructure, construction resulted in damage to surface deposits containing archeological materials. Adverse impacts resulting from these actions have been moderate to major and permanent.

As described above, impacts associated with the implementation of alternatives B and C would result in permanent, negligible to minor, adverse impacts. These negligible to minor adverse effects, in combination with the impacts of other past, present, and reasonably foreseeable future actions, would result in a permanent moderate adverse cumulative effect. However, most adverse impacts would be confined to small, localized areas or would be somewhat offset by beneficial impacts. The adverse effects associated with implementation of alternative B or C would be a small component of the adverse cumulative impact.

Conclusion. The ground disturbing activities, trail work, and construction proposed under alternatives B and C would occur in areas that would avoid adverse impacts to cultural resources to the greatest extent possible. This would result in localized, negligible to minor, permanent, adverse impacts to

archeological resources, or no impacts at all.

Acquiring the Riverfront Tract and evaluating it for national register-eligible archeological resources would give park managers a baseline for managing these resources. Rangers would also have jurisdiction to protect these resources under federal preservation laws. These actions would result in long-term, local, beneficial impacts to archeological resources.

Section 106 Summary. Most impacts under alternative B and alternative C could be mitigated. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that the impacts common to alternatives B and C would have *no adverse effect* on archeological resources. Consultations with the state historic preservation officer and consulting tribes would occur to develop mitigation strategies.

CULTURAL LANDSCAPES

A cultural landscape inventory of Effigy Mounds National Monument for all but ethnographic landscapes has been completed and its results concurred by the Iowa state historic preservation officer. (The inventory is a computerized, evaluated inventory of all cultural landscapes within the national park system unit. Its purpose is to identify cultural landscapes and to provide information on location, historical development, character-defining features, and management). Two landscapes were identified: (1) Yellow River Cultural Landscape, encompassing the North and South Units and the Heritage Addition; and (2) Sny Magill Cultural Landscape, encompassing the entire Sny Magill Unit. Both were designated historic sites for their connection to an event, activity, or person. An ethnographic landscape may exist that is connected to contemporary American Indians. However, such a landscape has not been formally studied and an official determination has not been made. Therefore, effects of the alternatives on such an undefined landscape have not been attempted.

For purposes of analyzing potential impacts, the thresholds of change for the intensity of an impact to cultural landscapes used in this general management plan are defined as follows:

Negligible—Impact would be at the lowest levels of detection—barely perceptible or measurable. The determination of effect for section 106 would be *no adverse effect*.

Minor—Impacts would be perceptible and measurable, but would be localized and confined to a single character defining pattern or feature. The determination of effect for section 106 would be *no adverse effect*.

Moderate—Impacts to a character defining pattern(s) or feature(s) would not diminish the integrity of the landscape's location, design, setting, materials, workmanship, feeling, or association. The determination of effect for section 106 would be *adverse effect*.

Major—Impacts would result in substantial and highly noticeable changes to character defining pattern(s) or feature(s), diminishing the integrity of the landscape's location, design, setting, materials, workmanship, feeling, or association. The determination of effect for section 106 purposes would be *adverse effect*.

The location and design of actions proposed under the alternatives would be guided by the recommendations made in an upcoming cultural landscape report. The report would make recommendations for preserving character-defining features of the cultural landscapes. These

recommendations should minimize or reduce adverse effects. Treatment of the cultural landscapes would also be informed by the public access / trail development plan and long-range interpretive plan.

Impacts Common to All Alternatives

Several actions proposed in all of the alternatives could potentially impact one or both of the identified cultural landscapes. These potential impacts include the following:

Ground Disturbance. The following actions could result in ground disturbance.

Visitor Foot Traffic and Pothunting—Foot traffic on the mounds and pothunting excavations could lead to erosion that could compromise the integrity of the mounds. Ranger patrols, signage, and improved trail systems would reduce the incidence of these activities, and any adverse impacts would be local, negligible to minor, and permanent.

Mound Maintenance—A cultural landscape report would be prepared in the near future to prescribe specific recommendations for mound maintenance, and what follows is based on what the National Park Serivce's best assumptions are for what that report might recommend.

The mounds associated with both identified cultural landscapes are character-defining features. Removal of trees and trees that have blown down could damage the mounds in localized areas. However, stabilization techniques (e.g., using clean fill to stabilize disturbed areas) would restore mound appearances. Maintaining mound appearances would result in a long-term, beneficial impact to the cultural landscapes of the monument.
Mississippi River Bank Stabilization—Materials used to stabilize banks along the Mississippi River in the Sny Magill Unit would create a visual intrusion to the landscape. This would create a long-term, minor, adverse impact to the landscape, but would be localized to the riverbanks. This impact would be offset by the long-term, beneficial effect of stabilizing bank erosion, which threatens the landscape integrity.

Cumulative Effects. With the arrival of European settlement, the mounds that had survived centuries with little change began to disappear as lands were leveled for farms and towns. Forested areas were cut down and erosion damaged many mounds that had survived millennia. Agriculture, development, and logging continue today and would also occur in the future. Development has damaged mounds, altered historic land use and circulation patterns, and has changed the spatial relationship between landscape features and patterns, resulting in long-term moderate to major adverse impacts to cultural landscapes.

In addition, natural viewsheds have been affected by commercial and industrial development across the Mississippi River in Prairie du Chien, Wisconsin, where reflective surfaces (e.g., roofs) detract from the view. Rock and gravel mining operations are affecting views from the approach to the Sny Magill Unit. Impacts to cultural landscapes are adverse, moderate, and long term.

As described above, impacts common to all alternatives would result in negligible to minor, long-term, adverse impacts and long-term, beneficial impacts. These impacts, in combination with the impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term, moderate, adverse cumulative effect. However, many of the proposed actions would restore and protect the cultural landscapes; therefore, the adverse effects associated with the impacts common to all alternatives would be a small component of the adverse cumulative impact.

Conclusion. Visitor foot traffic and pothunting could result in the loss of integrity of landscape character-defining features, such as the mounds. However, ranger patrols and visitor stewardship education would minimize these activities, resulting in a permanent, negligible to minor, localized, adverse impact.

Most maintenance and stabilization activities common to all alternatives would have long-term, beneficial impacts because these would be designed to protect and preserve landscape character-defining features.

Applying stabilization materials to portions of Mississippi River banks would have a long-term, moderately negative impact, which would be restricted to a small portion of the landscape. These impacts, in part, would be offset by the long-term, beneficial effect of stabilizing the riverbanks.

Section 106 Summary. While most of the actions common to all the alternatives would have beneficial or minor to minor adverse impacts to landscape features, applying stabilization materials along Mississippi River banks would have a long-term, moderate, adverse effect. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that the actions common to all alternatives would have an *adverse effect* on cultural landscapes. Consultations with the state historic officer and consulting tribes would occur to develop mitigation strategies.

Impacts from Implementing Alternative A

There would be no additional impact to cultural landscapes associated with alternative A.

Impacts from Implementing Alternative B or Alternative C

Regarding cultural landscapes, alternatives B and C are the same except for two differences: (1) under alternative B, the existing trail in the Sny Magill Unit would be improved from the parking lot to the first set of mounds and under alternative C, the entire trail would be upgraded; and (2) the short maintenance access road in the North Unit would be abandoned and allowed to overgrow and return to nature in alternative B, but not under alternative C. This would result in beneficial impacts to cultural landscape as the intrusive road goes away. The following analysis pertains to both alternatives for all impacts except those relating to the Sny Magill trail.

There are specific actions relating to trails development, construction, and land acquisitions under alternatives B and C that could impact cultural landscape defining features.

Ground Disturbance. The following actions could result in ground disturbance:

Trail and Road Development or Removal—Alternatives B and C would propose several ground disturbing actions involving trails and roads. These projects would include

- Yellow River bridge new trail connection to South Unit trail system
- Heritage Addition Development of Old Roads as Trails / Trail Development
- Heritage Addition New Trail Construction
- Fire Point Trail Realignments
- Sny Magill Trail Construction
- Removal of Old Roads

To the extent possible, placement of trails and any associated wayside exhibits and signs would be designed to avoid impacting

character-defining features in the cultural landscapes. This would result in negligible to minor, adverse impacts that would be localized.

Converting old roads to trails and removing roads would lessen or eliminate their footprint on the landscapes, which would assist in returning the landscape to their moundbuilding era appearance. This would result in long-term, beneficial impacts in numerous locations throughout the monument.

New trails constructed in the Heritage Addition, South Unit, and a realignment at Fire Point Mound would be located to have minimal impacts to character defining features of the landscapes. Signs and waysides associated with these trails also would be located to minimize impacts to landscape features. Upgrading the current trail at the Sny Magill Unit to a low-profile trail designed to provide accessibility during wet periods could introduce visual intrusions, which could result in local, negligible to minor, adverse impacts to the landscape.

Under alternative B, the upgraded trail would extend only to the first (most southern) set of mounds. The remainder of current trail would remain unimproved. Under alternative C, the entire trail would be upgraded. The upgraded portion(s) of the trail would encourage people to stay off the mounds. This would reduce damage to the mounds, which would have a long-term, beneficial effect.

Careful design would ensure that the construction or improvement of trails and the installation of wayside exhibits and signs would minimally affect the scale and visual relationships among landscape features or circulation patterns and features. In addition, the topography, native vegetation patterns, and land use patterns would remain unaltered. Any adverse impacts would be long-term and range in intensity from negligible to minor.

Stabilization of Fire Point Mound in the North Unit—Stabilizing and restoring the mound's original dimensions would require additional soil to re-create the mound's previous outline. Soil from outside the national monument, free of cultural materials, would be used. Stabilizing the mound would prevent further erosion. Restoring the mound appearance and preventing further erosion would result in a local, long-term, beneficial impact to the landscape.

Land Acquisition—Alternative B and alternative C call for the acquisition of the Riverfront Tract located within the monument's authorized boundary from willing sellers. After acquiring this tract, the monument would determine if the tract meets national register significance criteria as components of the cultural landscapes. Identifying and evaluating these resources would inform monument staff on the best manner to manage and protect these resources. In addition, park rangers would also have jurisdiction to protect these resources under federal preservation laws. These actions would result in local, long-term, beneficial effects.

Ecosystem Restoration—Alternative B and C would propose removing nonnative plants and animals and using fire to manage the forest and meadow ecosystems. These actions would be designed to restore the landscapes to their moundbuilding era conditions. Restoring the ecosystems within the monument would have a long-term, beneficial impact throughout much of the monument.

Cumulative Effects. With the arrival of European settlement, the mounds that had survived centuries with little change began to disappear as lands were leveled for farms and towns. Forested areas were cut down and erosion damaged many mounds that had survived millennia. Agriculture, development, and logging continue today and would also occur in the future. Development has damaged mounds and altered historic land use and circulation

patterns and the spatial relationship between landscape features and patterns, resulting in long-term moderate to major adverse impacts to cultural landscapes.

In addition, natural viewsheds have been affected by commercial and industrial development across the Mississippi River in Prairie du Chien, Wisconsin, where reflective surfaces (e.g., roofs) detract from the view. Rock and gravel mining operations also are affecting views from the approach to the Sny Magill Unit. Impacts to cultural landscapes are adverse, moderate and long term.

As described above, impacts associated with the implementation of alternatives B and C would result in negligible to minor, long-term, adverse impacts and long-term, beneficial impacts. These impacts, in combination with the impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term moderate adverse cumulative effect. However, many of the proposed actions would restore and protect the cultural landscapes. Therefore, the adverse effects associated with the impacts common to all alternatives would be a small component of the adverse cumulative impact.

Conclusion. Trail work and roadwork would be confined to previously disturbed areas or designed to avoid or minimize adverse impacts to landscape character-defining features to the greatest extent possible. These ground disturbing activities could have negligible to minor, long-term, localized impacts to the cultural landscapes, or no impacts at all. Improved trail and road designs that encourage visitor to stay off the mounds would result in a long-term, beneficial impact throughout much of the monument. Acquiring the Riverfront Tract, stabilizing Fire Point Mound, and restoring landscapes would afford greater federal protection over new lands as well as protect and perpetuate character-defining landscape features. These actions would result in long-term, beneficial impacts throughout much of the monument.

Overall, implementing alternative B or C would result in a long-term, monumentwide, beneficial impact and a long-term, monumentwide, negligible to minor, adverse impact on the monument's cultural landscapes, which could be lessened through avoidance, mitigation, or design.

Section 106 Summary. While many of the actions proposed for alternatives B and C would have beneficial or minor to moderate adverse impacts to landscape features, adding built features in the Heritage Addition and Sny Magill Unit could result in minor to moderate negative impacts. These could be lessened through proper placement and design. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that the actions associated with alternatives B and C would have *no adverse effect* on cultural landscape resources. Consultations with the state historic preservation officer and consulting tribes would occur to develop mitigation strategies.

ETHNOGRAPHIC RESOURCES

Ethnographic resources are basic expressions of human culture and the basis for continuity of cultural systems. A cultural system encompasses both the tangible and the intangible. It includes traditional arts and native languages, religious beliefs, and subsistence activities. Some of these traditions are supported by ethnographic resources—special places in the natural world, structures with historic associations, and natural materials. Management of ethnographic resources acknowledges that culturally diverse groups have their own ways of viewing the

world and a right to maintain their traditions.

For purposes of analyzing potential impacts, the thresholds of change for the intensity of an impact to ethnographic resources used in this general management plan are defined as follows:

Negligible—Impacts would be at the lowest levels of detection and barely perceptible. Impacts would neither alter resource conditions, such as traditional access or site preservation, nor alter the relationship between the resource and the associated group's body of practices and beliefs. For purposes of section 106, the determination of effect would be *no adverse effect*.

Minor—Impacts would be slight but noticeable and would neither appreciably alter resource conditions, such as traditional access or site preservation, nor alter the relationship between the resource and the associated group's body of beliefs and practices. For purposes of section 106, the determination of effect would be *no adverse effect*.

Moderate—Impacts would be apparent and would alter resource conditions or interfere with traditional access, site preservation, or the relationship between the resource and the associated group's beliefs and practices, even though the group's practices and beliefs would survive. For purposes of section 106, the determination of effect would be *adverse effect*.

Major—Impacts would alter resource conditions. Proposed actions would block or greatly affect traditional access, site preservation, or the relationship between the resource and the associated group's body of beliefs and practices to the extent that the survival of a group's beliefs or practices could be jeopardized. For purposes of section 106, the determination of effect would be adverse effect.

Impacts Common to All Alternatives

Actions relating to ethnographic resources would be the same for the no-action alternative and the two action alternatives. Following are the components of ethnographic resources that were analyzed in this document.

Preservation of Mounds. The monument staff would work to retain the form and appearance of the mounds. This would preserve the integrity of ethnographic resources within the monument. These actions would not affect access to the mounds or American Indian ability to practice traditional beliefs. The result would be a site-specific monumentwide, long-term, beneficial impact.

Ecosystem Restoration. The monument staff would work to restore the existing ecosystem by eliminating or minimizing the impact of nonnative species, encouraging the growth of native species, and implementing controlled burns. Most of these activities would not affect access to the mounds or American Indian groups' ability to practice their traditional beliefs. Thus, these actions would result in a site-specific monumentwide, long-term, beneficial impact. However, access could be limited for a short period (possible affecting the ability of a group to practice traditional beliefs) during prescribed burns. This would result in a short-term, minor, adverse impact to ethnographic resources during the recovery of burned areas.

Maintenance of Natural Viewsheds and Soundscapes. The national monument staff would work to preserve viewsheds and soundscapes by protecting or restoring the landscapes and managing ambient sound levels. Access to the mounds would not be affected nor would American Indian groups' ability to practice their traditional beliefs. Preserving these important features

would result in a monumentwide, long-term, beneficial impact.

Nomination of Eligible Cultural Resources for Inclusion in the National Register of Historic Places. The surveys and research necessary to determine the eligibility of a resource for listing in the national register are a prerequisite for better understanding the resource's significance, as well as the basis of informed decision making in the future regarding how the resource should be managed. This would result in a monumentwide, long-term, beneficial impact.

Interpretation of Resources in a Manner Sensitive to the Sacred Nature of the Site. The national monument staff would interpret the site to help visitors understand the connections between American Indians and Effigy Mounds. For example, programs explaining contemporary tribal interpretation and association with the mounds could be developed with input and concurrence from consulting tribes. This would result in a monumentwide, long-term, beneficial impact.

Cumulative Effects. In the past, agriculture, development, and logging have damaged or destroyed numerous ethnographic resources throughout the region or have limited tribal access to the resources that remain. These trends continue in the present and are expected to continue in the future. These have led to permanent, major, adverse impacts to ethnographic resources throughout the region.

As described above, impacts common to all alternatives would result in minor, short-term, adverse impacts and long-term, beneficial impacts. These impacts, in combination with the impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term, moderate, adverse cumulative effect. However, many of the adverse impacts of the alternatives would be localized, short-term, and offset by beneficial impacts. Therefore, the adverse effects associated with the impacts common to all alternatives would be a very small component of the adverse cumulative impact.

Conclusion. Most actions described in the actions common to all alternatives would not result in loss of access or loss of the ability to practice tribal traditional beliefs at Effigy Mounds National Monument. However, prescribed burns could temporarily limit access and the ability to carry out traditional practices. These minor, adverse impacts would be local and short term.

The overall impact of actions common to all the alternatives would be long-term, beneficial impacts on ethnographic resources and would not contribute to the overall adverse cumulative effect within the region.

Section 106 Summary. Each of the actions common to alternatives A, B, and C would have long-term, beneficial effects on ethnographic resources. After applying the Advisory Council on Historic Preservation criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that the impacts common to all alternatives would have a *no adverse effect* on ethnographic resources.

Impacts from Implementing Alternative A

See section titled "Impacts Common to All Alternatives."

Impacts from Implementing Alternative B or Alternative C

See section titled "Impacts Common to All Alternatives."

MUSEUM COLLECTIONS

Museum collections (prehistoric and historic objects, artifacts, works of art, archival documents, manuscripts, and natural history specimens) are generally ineligible for inclusion in the National Register of Historic Places. As such, section 106 determinations of effect are not provided. However, such collections may be threatened by fire, theft, vandalism, natural disasters, and careless acts. The preservation of museum collections is an ongoing process of preventive conservation, supplemented by conservation treatment when necessary. The primary goal is preservation of artifacts in as stable condition as possible to prevent damage and to minimize deterioration. For purposes of analyzing potential impacts, the thresholds of change for the intensity of an impact to museum collections used in this general management plan are defined as follows:

Negligible—Impact is at the lowest levels of detection, barely measurable with no perceptible consequences.

Minor—Impact(s) would affect the integrity of few items in the museum collection but would not degrade the usefulness of the collection for future research and interpretation.

Moderate—Impact(s) would affect the integrity of many items in the museum collection and diminish the usefulness of the collection for future research and interpretation.

Major—Impact(s) would affect the integrity of most items in the museum collection and destroy the usefulness of the collection for future research and interpretation.

Impacts from Implementing Alternative A

In alternative A, collections would remain in the lower level of the visitor center. This area does not meet NPS museum collections standards. The national monument does not have a curator and often cannot accommodate visiting researchers. Because museum display conditions are outdated, only items not affected by a lack of light and temperature controls can be exhibited in the visitor center. Maintaining the museum collections under current conditions in the visitor center would result in a long-term, minor to moderate, adverse effect because storage conditions do not meet NPS museum collections standards. Current storage conditions would continue to have a long-term, moderate, adverse effect on the staff's and visiting researchers' ability to inspect and study the collections locally at the visitor center.

Cumulative Effects. Numerous museums with archeological and archival collections exist throughout the upper Midwest as a result of excavations by universities, historical societies, and individuals over the last approximately 150 years. The collections within the national monument make up a small but significant portion of the whole body of knowledge of the moundbuilder culture. Because they contain some of the earliest systematic archeological work undertaken, they have a particular importance to the history of archeology. The preservation and study of these materials has greatly expanded our understanding of the moundbuilders, which has resulted in a long-term, regional, beneficial effect.

As described above, impacts associated with the implementation of alternative A would result in long-term, minor to moderate, adverse impacts to museum collections. These impacts, in combination with the impacts of other past, present, and reasonably foreseeable future actions,

would result in a long-term, minor to moderate adverse, cumulative effect. The adverse effects associated with implementation of alternative A would be a substantial component of the adverse cumulative impact.

Conclusion. Items in the collections would continue to be stored and maintained in facilities that does not meet NPS museum collections standards. Items on display would continue to be limited to those that are not affected by the substandard conditions of the exhibit cases. Access to the collection would remain limited. Overall, the no-action alternative would have minor to moderate, long-term, adverse impacts due to inadequate storage conditions and the absence of research space.

Impacts from Implementing Alternative B

Alternative B calls for establishing a virtual, web-based research center to be maintained by park staff. The virtual center, in time, would have electronic data on objects in the collection (e.g., catalog data and scanned images) that could be easily shared locally, nationally, or even internationally. The virtual research center would be a long-term, moderate to major benefit because it would promote the research of museum objects and information sharing about moundbuilders. The virtual center would have the potential to reach a geographically dispersed audience via the Internet.

Alternative B would call for relocating nonexhibit museum objects and archives to an off-site facility that fully meets NPS museum management standards or to improve the existing facility and staffing to more closely meet NPS museum collections standards. Due to concerns raised by traditionally associated tribes and other stakeholders, it may be preferable to keep the collections at Effigy Mounds National Monument. The National Park Service (in consultation with the state historic preservation officer, Office of the State Archaeologist, and traditionally associated tribes) would evaluate regional options for the storage of the collections (including partnerships) and improvements to the existing facility and an increase in staffing to determine what is best for the long-term care of the collections.

In alternative B, moving the collection to a facility that fully meets NPS museum collections standards or improving the existing facility to more closely meet NPS museum collections standards would afford better climate control, storage conditions, and security than the current facility. Both facilities would also have a staff member dedicated to the collections, which would enhance protection and accountability of the collections. Enhanced storage and a dedicated staff member would result in a long-term, local, beneficial impact to the collections.

Cumulative Effects. Numerous museums with archeological and archival collections exist throughout the Upper Midwest as a result of excavations by universities, historical societies, and individuals over the last approximately 150 years. The collections within the national monument make up a small but significant portion of the whole body of knowledge of the moundbuilding culture. Because the collections contain some of the earliest systematic archeological work undertaken, they have particular importance to the history of archeology. The preservation and study of these materials has greatly expanded our understanding of the moundbuilders, resulting in a long-term, regional, beneficial effect.

As described above, impacts associated with the implementation of alternative B would result in long-term beneficial impacts to museum collections. These impacts, in combination with the impacts of other past, present, and reasonably foreseeable future actions, would result in

a long-term, beneficial impact. The beneficial effects associated with implementation of alternative B would be a substantial component of the beneficial cumulative impact.

Conclusion. In alternatives B, the collections would be housed in a facility that fully meets or more closely meets NPS museum collections standards. The alternative would allow greater accessibility to the collections than currently available under alternative A. The impact to the preservation of the collections and their usefulness in the long term would be moderate to major and beneficial, locally, regionally, and possibly nationally or internationally.

Impacts from Implementing Alternative C

Alternative C calls for establishing a physical research center on leased property within 10 miles of the park. The physical research center would have space where researchers could personally examine objects. The physical research center would be a long-term, moderate to major benefit because it would promote the research of museum objects and information sharing about moundbuilders. The physical center would have more of a local or regional impact.

Both alternative B and C call for relocating nonexhibit museum objects and archives to an off-site facility that fully meets NPS museum management standards. The alternatives differ in the location of the facility. Under alternative B, the facility has yet to be determined. Under alternative C, the facility would be a leased property within 10 miles of the park. Under both alternatives, moving the collection to a facility that fully meets NPS museum collections standards would afford better climate control and storage conditions than the park's visitor center basement. Both facilities would also have a staff member dedicated to the collections, which would enhance protection and accountability of the collections. Enhanced storage and a dedicated staff member would result in a long-term, local, beneficial impact to the collections.

Under alternative C, the facility would be a leased property within 10 miles of the park. Under both alternatives, moving the collection to a facility that fully meets NPS museum collections standards would afford better climate control and storage conditions than the park's visitor center basement. Both facilities would also have a staff member dedicated to the collections, which would enhance protection and accountability of the collections. Enhanced storage and a dedicated staff member would result in a long-term, local, beneficial impact to the collections.

Cumulative Effects. Numerous museums with archeological and archival collections exist throughout the Upper Midwest as a result of excavations by universities, historical societies, and individuals over the last approximately 150 years. The collections within the national monument make up a small but significant portion of the whole body of knowledge of the moundbuilding culture. Because they contain some of the earliest systematic archeological work undertaken, they have particular importance to the history of archeology. The preservation and study of these materials has greatly expanded our understanding of the moundbuilders, resulting in a long-term, regional, beneficial effect.

As described above, impacts associated with the implementation of alternative C would result in long-term beneficial impacts to museum collections. These impacts, in combination with the impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term, beneficial impact. The beneficial effects associated with implementation of alternative C would be a substantial component of the beneficial cumulative impact.

Conclusion. In alternative C, the collections would be housed in a facility that fully meets NPS museum collections standards. The alternative would allow greater accessibility to the collections than currently available under alternative A. The impact to the preservation of the collections and their usefulness in the long term would be moderate to major and beneficial, locally, regionally, and possibly nationally or internationally.

NATURAL RESOURCES

INTRODUCTION

Analysis of natural resources was based on research, knowledge of monument resources, and the best professional judgment of planners, biologists, hydrologists, and botanists who have experience with similar types of projects. Information on natural resources was gathered from several sources, including the U.S. Fish and Wildlife Service and site-specific resource inventories for wetlands, water quality, wildlife, fisheries, and vegetation. As appropriate, additional sources of data are identified under each topic heading.

Where possible, map locations of sensitive resources were compared with the locations of proposed developments and modifications. Predictions about short-term and long-term site impacts were based on previous experience with visitor and facilities development impacts on natural resources.

The definitions below assume that mitigation would be implemented. For this document, the planning team qualitatively evaluated the impact intensity for natural resources using specific methodology and threshold definitions.

SOILS

Predictions about site impacts were based on knowledge of impact on soils from development of visitor and operations facilities under similar circumstances. Short-term impacts are those expected to last one year or less while long-term impacts would last longer than one year. The following categories were used to evaluate the potential impacts on soils:

Negligible—The impact on soils would be slight and largely unnoticeable. Any effects on productivity or erosion potential would not be measurable.

Minor—An action would change a soil's profile in a relatively small area, but it would not appreciably increase the potential for erosion of additional soil.

Moderate—An action would result in a change in quantity or alteration of the topsoil, overall biological productivity, or the potential for erosion to remove small quantities of additional soil. Changes to localized ecological processes would be of limited extent.

Major—An action would result in a change in the potential for erosion to remove large quantities of additional soil or in alterations to topsoil and overall biological productivity in a relatively large area. Key ecological processes would be altered and landscape-level changes would be expected.

Impacts from Implementing Alternative A

A continuation of minimal impacts on soil resources would be expected as a result of implementing alternative A. There would be no new construction or new ground disturbing actions under this alternative. Therefore, this alternative would have no effect on soil resources.

Cumulative Effects. Actions affecting soil resources that have occurred or would occur include agricultural and residential development on adjacent lands and construction of infrastructure such as utility lines and roadways.

Farming, grazing, quarrying, and logging have occurred historically around and in the units of the monument before it was established. The only place this did not occur was where the topography was so rough that it prevented efficient agricultural or timber operations. These activities have adversely impacted the soils to varying degrees by affecting compaction, displacement, erodibility, and nutrient content.

Impacts on soils have also occurred in the national monument. Construction of service and public roads, structures, trails, and other developments in the monument have disturbed soils and affected productivity of the land. Impacts from existing roads and developments in the monument would remain. Resource management activities such as prescribed burning affect soil by direct heating and increasing the potential for erosion after burning until revegetation occurs. Prescribed burns would not be allowed to get hot enough to sterilize the soil. Impacts from existing roads and developments in the monument would remain as no removal of these developments is prescribed in the no-action alternative.

Because this alternative would have no new effect on soils, there would be no project-related cumulative effect.

Conclusion. If implemented, alternative A would have no impacts to soil resources in the monument. There would be no project-related cumulative effect.

Impacts from Implementing Alternative B

A portion of the trail at Sny Magill would be improved according to a site development plan that would be prepared after completion of this general management plan. This trail would most likely be on or near the alignment of the existing trail, so short-term adverse impacts would be negligible, caused by soil disturbance and possible loss by wind and water erosion during construction. By keeping visitors on the trail, impacts to soft, wet soil would be alleviated, so long-term impacts to soils would be beneficial and negligible. The proposed visitor contact station would be built on disturbed ground on acquired land and would have no new effect on monument soils.

Actions proposed in this alternative also include construction of visitor trails in the Heritage Addition and South Unit. Some existing logging roads would be converted to trails according to a public access/ trail development plan.

Impacts to soils from the actions described above would include removal or displacement of topsoil during construction and changes to erosion potential. These short-term impacts would be minor and adverse. Long-term impacts from these actions would include ongoing soil compaction and possible erosion, and are anticipated to be negligible to minor and adverse.

Cumulative Effects. Actions affecting soil resources that have occurred or would occur include agricultural and residential development on adjacent lands and construction of infrastructure such as utility lines and roadways.

Farming, grazing, quarrying, and logging have occurred historically around and in the units of the monument before it was established. The only place this did not occur was where the topography was so rough that it prevented efficient agricultural or timber operations. These activities have adversely impacted soils to varying degrees by affecting characteristics such as compaction, displacement, erodibility, and nutrient content.

Impacts on soils have also occurred in the national monument. Construction of service and public roads, structures, trails, and other developments in the monument have disturbed soils and have affected

productivity of the land. Impacts from existing roads and developments in the monument would remain. Resource management activities such as prescribed burning affect soil by direct heating and increasing the potential for erosion after burning until revegetation occurs. Properly conducted prescribed burns would not be allowed to get hot enough to sterilize the soil.

Alternative B would have negligible to minor adverse impacts to soil resources and, when considered in combination with the above minor adverse impacts on soil resources, would result in a minor adverse cumulative impact. Alternative B would have a small contribution to these effects.

Conclusion. Alternative B would have short-term, minor, adverse impacts and long-term, negligible to minor, adverse impacts to soil resources in the monument. It would result in a minor, adverse, cumulative impact.

Impacts from Implementing Alternative C

The trail would be improved at Sny Magill according to a site development plan that would be prepared after completion of this general management plan. This trail would most likely be on or near the alignment of the existing trail but longer than in alternative B. Short-term adverse impacts would be negligible, caused by soil disturbance and possible loss by wind and water erosion during construction. By confining visitors to the trail, impacts to soft, wet soil would be alleviated, so long-term impacts to soils would be beneficial and negligible. The proposed visitor contact station would be built on disturbed ground on acquired land and would have no new effect on monument soils.

Actions proposed in this alternative also include construction of visitor trails in the Heritage Addition and the South Unit. Some existing logging roads would be converted to trails according to a public access / trail development plan.

Impacts to soils from the actions described would include removal or displacement of topsoil during construction and changes to erosion potential. These short-term impacts would be minor and adverse. Long-term impacts from these trails would include soil compaction and possible erosion, and are anticipated to be negligible to minor and adverse.

Cumulative Effects. Actions affecting soil resources that have occurred or would occur include agricultural and residential development on adjacent lands and construction of infrastructure such as utility lines and roadways.

Farming, grazing, quarrying, and logging have occurred historically around and in the units of the monument before it was established. The only place this did not occur was where the topography was so rough that it prevented efficient agricultural or timber operations. These activities have adversely impacted soils to varying degrees by affecting characteristics such as compaction, displacement, erodibility, and nutrient content.

Impacts on soils have also occurred in the national monument. Construction of service and public roads, structures, trails, and other developments in the monument have disturbed soils and have affected productivity of the land. Impacts from existing roads and developments in the monument would remain. Resource management activities such as prescribed burning affect soil by direct heating and increasing the potential for erosion after burning until revegetation occurs. Properly conducted prescribed burns would not be allowed to get hot enough to sterilize the soil.

Alternative C would have negligible to minor adverse impacts to soil resources and, when considered in combination with the above minor adverse impacts on soil

resources, would result in a minor adverse cumulative impact. Alternative C would have a small contribution to these effects.

Conclusion. Alternative C would have short-term, minor, adverse impacts and long-term, negligible to minor, adverse impacts to soil resources in the monument. It would result in a minor adverse cumulative impact.

WILD AND SCENIC RIVERS

Included in this general management plan is the assessment to determine if the Yellow River is eligible and suitable for inclusion in the National Wild and Scenic Rivers System (appendix D). The National Park Service has found that the 3.5-mile segment of the Yellow River that flows through the monument is suitable and is recommending it for designation as a national wild and scenic river. Therefore, the river must be managed to prevent any change to the characteristics that make it suitable for wild and scenic river designation. The National Park Service compared the management actions for each alternative with the criteria identified in the Wild and Scenic Rivers Act and associated NPS policies to determine if the river's free-flowing character or identified outstandingly remarkable values would be affected.

Duration of Impact. A short-term impact would last less than 1 year following implementation of an action. A long-term impact would last longer than 1 year after implementing the action.

Intensity of Impact. The intensity or magnitude of impacts on wild and scenic river values have been described as negligible, minor, moderate, or major.

Negligible—Impacts would have no discernible effect on wild and scenic river values.

Minor—Impacts would be detectable and affect a limited area that meets wild and scenic river suitability.

Moderate—Impacts would be sufficient to cause a change in the wild and scenic river values and they would be readily apparent.

Major—Impacts would substantially alter the wild and scenic river values, eliminating the characteristics that meet the criteria for consideration as wilderness.

Type of Impact. Impacts were classified as adverse if they would adversely affect wild and scenic river values or integrity. Conversely, impacts were classified as beneficial if they would enhance wild and scenic river values or integrity.

Impacts from Implementing Alternative A

Alternative A would not cause any changes to current situations affecting the wild and scenic river suitability characteristics of the Yellow River. Existing conditions and influences on the outstandingly remarkable values identified for the river would continue as they are now.

There would be no new development or change in existing development in the river corridor under this alternative; therefore, there would be no effect.

Cumulative Effects. Agriculture, residential development, and commercial land uses in the Yellow River watershed have removed water, disrupted natural runoff, disturbed natural precipitation percolation, and adversely affected water quality. The river is listed on Iowa's impaired waters list for high levels of fecal coliform bacteria, possibly from upstream concentrated animal feeding operations.

Three bridges have been built over the Yellow River near its mouth—one pedestrian bridge in the monument and a highway bridge and railroad bridge outside

the monument. The National Park Service currently has no control or jurisdiction over the Yellow River outside the monument. If the river were to be designated, the National Park Service would review project proposals to determine if there would be any impacts to Wild and Scenic River values.

These actions have resulted in minor adverse impacts on the Yellow River. This alternative would not contribute to these impacts and therefore would have no project-related cumulative effects.

Conclusion. Alternative A would have no effect on the Yellow River's wild and scenic river values. Because this alternative would have no effect, there would be no project-related cumulative effects.

Impacts from Implementing Alternative B

This alternative would not result in any changes to current situations affecting the wild and scenic rivers suitability characteristics of the Yellow River. Existing conditions and influences on the outstandingly remarkable values identified for the river would continue as they are now.

There would be no other development or change in existing development in the Yellow River corridor under this alternative. Therefore, there would be no effect on wild and scenic rivers values.

Cumulative Effects. Agriculture, residential development, and commercial land uses in the Yellow River watershed have removed water, disrupted natural runoff, disturbed natural precipitation percolation, and adversely affected water quality. The river is listed on Iowa's impaired waters list for high levels of fecal coliform bacteria, possibly from upstream, contained animal feeding operations.

Three bridges have been built over the river near its mouth—a pedestrian bridge in the monument, and a highway bridge and a railroad bridge outside the monument. The National Park Service currently has no control or jurisdiction over the Yellow River outside the monument. If the river were to be designated, the National Park Service would review project proposals according to section 7 of the Wild and Scenic Rivers Act to determine if there would be any impacts to wild and scenic river values.

These actions have resulted in minor adverse impacts on the Yellow River. This alternative would not contribute to these impacts and therefore would have no project-related cumulative effects.

Conclusion. Alternative B would have no effect on the Yellow River's wild and scenic rivers values and suitability. Because this alternative would have no effect, there would be no project-related cumulative effects.

Impacts from Implementing Alternative C

This alternative would not result in any changes to current situations affecting the wild and scenic rivers suitability characteristics of the Yellow River. Existing conditions and influences on the outstandingly remarkable values identified for the river would continue as they are now.

There would be no new development or change in existing development in the river corridor under this alternative; therefore, there would be no effect.

Cumulative Effects. Agriculture, residential development, and commercial land uses in the Yellow River watershed have removed water, disrupted natural runoff, disturbed natural precipitation percolation, and adversely affected water quality. The river is listed on Iowa's

impaired waters list for high levels of fecal coliform bacteria, possibly from upstream, contained animal feeding operations.

Three bridges have been built over the river near its mouth—a pedestrian bridge in the monument, and a highway bridge and railroad bridge outside the monument. The National Park Service currently has no control or jurisdiction over the Yellow River outside the monument. If the river were to be designated, the National Park Service would review project proposals according to section 7 of the Wild and Scenic Rivers Act to determine if there would be any impacts to wild and scenic rivers values.

These actions have resulted in minor adverse impacts on the Yellow River. This alternative would not contribute to these impacts and therefore would have no project-related cumulative effects.

Conclusion. Alternative C would have no effect on the Yellow River's wild and scenic rivers suitability. Because this alternative would have no effect, there would be no project-related cumulative effects.

VEGETATION

Impacts were assessed qualitatively. Information was gleaned from general documents such as the monument's resource management plan, and results of site-specific surveys. Predictions about impacts were based on previous experience with development impacts on natural resources.

Negligible—The impact on vegetation (individuals and/or communities) would be at such a low intensity that it would not be measurable. The abundance or distribution of individuals would be only slightly affected. Ecological processes and biological productivity would not be affected.

Minor—An action would not necessarily decrease or increase the area's overall biological productivity. An action would affect the abundance or distribution of individuals in a localized area but would not affect the viability of local or regional populations or communities.

Moderate—An action would result in a change in overall biological productivity in a small area. An action would affect a local population sufficiently to cause a change in abundance or distribution, but it would not affect the viability of the regional population or communities. Changes to ecological processes would be of limited extent.

Major—An action would result in overall disruption of biological productivity in a relatively large area. An action would affect a regional or local population of a species sufficiently to cause a change in abundance or in distribution to the extent that the population or communities would not be likely to return to its/their former level (adverse), or would return to a sustainable level (beneficial). Key ecological processes would be altered.

Impacts from Implementing Alternative A

A continuation of minimal impacts on vegetation would be expected as a result of implementing alternative A. There would be no new construction but existing impacts from park development and use would continue. These actions include trails park roads, vegetation manipulation on the major mound groups, and riverbank stabilization.

Cumulative Effects. Actions affecting vegetation that have occurred or would occur include agricultural and residential development on adjacent lands and construction of infrastructure such as utility lines and roadways.

Farming, ranching, and logging have occurred historically around and in the units of the monument before it was established. The only place this did not occur was where the topography was so rough it prevented efficient agricultural or timber operations. Much of the native forest in the area has been cut down for lumber or to clear land for planting crops. More than a century of fire suppression has also affected vegetation. These activities adversely impacted native vegetation communities by disrupting natural plant succession, replacing native vegetation with monotypic nonnative plants (crops), and introducing noxious weeds that outcompete native vegetation for sunlight, moisture, and nutrients. Impacts on vegetation also occurred in the national monument. Construction of service and public roads, structures, trails, and other developments in the monument removed vegetation. Impacts from existing roads and developments in the monument would remain. Resource management activities, such as prescribed burning, attempt to restore natural vegetative succession and increase plant diversity.

Alternative A would involve a continuation of negligible and minor adverse impacts and, when considered in combination with the above minor to moderate adverse impacts on vegetation, would result in a minor adverse cumulative impact. The no-action alternative would have a slight contribution to these effects.

Conclusion. Implementing alternative A would result in a continuation of negligible and minor, adverse impacts to vegetation in the monument. It would result in a minor adverse cumulative impact.

Impacts from Implementing Alternative B

Alternative B would result in small changes in the level of development at the monument that could affect vegetation.

A portion of the existing trail at Sny Magill would be improved according to a site development plan to be prepared. Construction of the trail would result in the loss of vegetation, but since the trail would be short and most likely be on the alignment of the existing trail, short-term and long-term adverse impacts would be negligible. A small visitor contact station would be built on disturbed ground on acquired land and would have no new effect on monument vegetation.

Under this alternative, the short maintenance access road in the north part of the North Unit would be abandoned and allowed to rehabilitate naturally. This would be a beneficial impact as native vegetation repopulates the former road.

Actions proposed in this alternative also include construction of visitor trails in the Heritage Addition and the South Unit. Trails would be established primarily on old logging roads according to a public access / trail development plan. A connecting trail from the bridge into the South Unit would be constructed. Impacts would include loss of vegetation in the construction corridors—about one acre total. Short-term impacts would be minor and adverse. Long-term impacts from these trails are anticipated to be negligible and adverse and include a permanent loss of a small amount of vegetation and potential increase in the spread of exotic plants.

Cumulative Effects. Actions affecting vegetation that have occurred or would occur include agricultural and residential development on adjacent lands and the construction of infrastructure such as utility lines and roadways.

Farming, ranching, and logging have occurred historically around and in the units of the monument before it was established. The only place this did not occur was where the topography was so rough that it prevented efficient agricultural or timber operations. Much of

the native forest in the area has been cut down at one time or another for lumber or to clear land for planting crops. More than a century of fire suppression has also affected the current vegetation communities. These activities have adversely impacted native vegetation communities by disrupting natural plant succession, replacing native vegetation with unnatural monotypic plants (crops), and introducing noxious weeds that out-compete native vegetation for sunlight, moisture, and nutrients.

Impacts on vegetation have also occurred in the national monument. Construction of service and public roads, structures, trails, and other developments in the monument have removed vegetation. Impacts from existing roads and developments in the monument would remain. Resource management activities, such as prescribed burning, attempt to restore natural vegetative succession and increase plant diversity.

Alternative B would have short-term and long-term, minor, adverse impacts and a long-term beneficial impact. When considered in combination with the above minor to moderate, adverse impacts on vegetation, alternative B would result in a minor to moderate, adverse, cumulative impact. Alternative B would have a modest contribution to these effects.

Conclusion. Implementing alternative B would have short-term and long-term, minor, adverse impacts and a long-term, negligible, beneficial impact to vegetation in the monument. It would result in a minor to moderate adverse cumulative impact.

Impacts from Implementing Alternative C

Alternative C would result in small changes in the level of development at the monument that could affect vegetation. The trail at Sny Magill would be improved according to a site development plan to be prepared. Construction of the trail would result in the loss of vegetation, but since this would most likely be on the alignment of the existing trail, short-term and long-term adverse impacts would be negligible. A small visitor contact station would be built on disturbed ground on acquired land and would have no new effect on monument vegetation.

Actions proposed in this alternative also include construction of visitor trails in the Heritage Addition and the South Unit. An access trail to get visitors and monument operations into the Heritage Addition would be constructed according to a public access/ trail development plan. Additional trails would be established primarily on old logging roads. A connecting trail from the bridge into the South Unit would be constructed. Impacts would include loss of vegetation in the construction corridors—about one acre total. Short-term impacts would be minor and adverse. Long-term impacts from these trails are anticipated to be negligible and adverse and include a slight permanent loss of vegetation and possible increase in the spread of exotic plants.

Cumulative Effects. Actions affecting vegetation that have occurred or would occur include agricultural and residential development on adjacent lands and the construction of infrastructure such as utility lines and roadways.

Farming, ranching, and logging have occurred historically around and in the units of the monument before it was established. The only place this did not occur was where the topography was so rough that it prevented efficient agricultural or timber operations. Much of the native forest in the area has been cut down at one time or another for lumber or to clear land for planting crops. More than a century of fire suppression has also affected vegetation. These activities have adversely impacted native vegetation

communities by disrupting natural plant succession, replacing native vegetation with unnatural monotypic plants (crops), and introducing noxious weeds that out-compete native vegetation for sunlight, moisture, and nutrients.

Impacts on vegetation have also occurred in the national monument. Construction of service and public roads, structures, trails, and other developments in the monument have removed vegetation. Impacts from existing roads and developments in the monument would remain. Resource management activities, such as prescribed burning, attempt to restore natural vegetative succession and increase plant diversity.

Alternative C would have short-term and long-term, minor, adverse impacts. When considered in combination with the above minor to moderate, adverse impacts on vegetation, alternative C would result in a minor to moderate adverse cumulative impact. Alternative C would have a modest contribution to these effects.

Conclusion. Implementing alternative C would have short-term, minor, adverse impacts and long-term, negligible, adverse impacts to vegetation in the monument. It would result in a minor, adverse cumulative impact.

FISH AND WILDLIFE

Impacts on fish and wildlife are closely related to impacts on habitat. The analysis considered whether actions would be likely to displace some or all individuals of a species in the monument or would result in loss or creation of habitat conditions needed for the viability of local or regional populations. Impacts associated with fish and wildlife might include any change in habitat quality or quantity, food supply, protective cover, or distribution or abundance of species.

Short-term impacts are those expected to last during construction and for one year or less—allowing for vegetation recovery and for wildlife to become accustomed to the new structure. Long-term impacts would be those that last longer than one year.

Negligible—The impact would not be measurable on individuals, and the local populations would not be affected.

Minor—An action would affect the abundance or distribution of individuals in a localized area but would not affect the viability of local or regional populations.

Moderate—An action would affect a local population sufficiently to cause a minor change in abundance or distribution but would not affect the viability of the regional population.

Major—An action would affect a regional or local population of a species sufficiently to cause a change in abundance or in distribution to the extent that the population would not be likely to return to its former level (adverse), or would return to a sustainable level (beneficial).

Impacts from Implementing Alternative A

There would be no changes in management of fish, wildlife, or habitat in the monument.

There may be a continuation of long-term negligible, adverse impacts from fear and avoidance reactions to human use of the trails.

Cumulative Effects. Regional wildlife populations have been affected by human activities such as agricultural, commercial, and residential land uses and the introduction of nonnative species. There have been minor to moderate adverse impacts in the form of habitat loss or disruption associated with these activities.

Establishment of the national monument and acquisition of the Heritage Addition resulted in long-term beneficial impacts on wildlife by preserving these pieces of habitat and eliminating hunting. However, elimination of hunting is a reason being cited by locals for the recent unnatural increase in the white tail deer population. This high density of deer is causing some resource damage.

Spread of nonnative zebra mussels into the Mississippi River and its tributaries results in adverse effects from the disruption of natural lake and river ecosystems.

The no-action alternative would contribute a slight adverse increment to these effects and, when considered in combination with the above minor to moderate adverse impacts on fish and wildlife, would result in a minor, adverse cumulative impact to fish and wildlife resources.

Conclusion. Implementing alternative A would result in a continuation of negligible adverse impacts to fish and wildlife in the monument. It would result in a minor adverse cumulative impact.

Impacts from Implementing Alternative B

Some small changes to available habitat would be expected as a result of implementing alternative B.

A short trail at Sny Magill would be constructed according to a site development plan that would be prepared for this unit. Short-term minor adverse impacts in the form of wildlife fear and avoidance reactions would occur during the construction phase. Long-term adverse impacts would be negligible because the trail would most likely be built near the existing trail and would be low enough that animals would have no trouble crossing it. The visitor contact station would be built on disturbed ground on acquired land and have no effect on habitat in the monument.

Trails would be established on old logging roads in the Heritage Addition. A connecting trail from the bridge into the South Unit would be constructed.

Impacts of these actions would include loss of habitat in the construction corridors—about one acre total. Short-term impacts to wildlife would be minor and adverse during construction from the increased human presence and noise. Long-term impacts from this development, such as disturbance from trail users, are anticipated to be negligible and adverse.

Cumulative Effects. Regional wildlife populations have been affected by human activities such as agricultural, commercial, and residential lands uses and the introduction of nonnative species. Quality habitat available for wildlife has been increasingly restricted and fragmented. Hunting and the extirpation of natural predators have adversely affected population structure and dynamics of game species. There have been direct and indirect, minor to moderate, adverse impacts associated with these conditions.

Establishment of the national monument and acquisition of the Heritage Addition have resulted in long-term beneficial impacts on wildlife by preserving these pieces of habitat and eliminating hunting. However, elimination of hunting is a reason being cited by locals for the recent unnatural increase in the white-tail deer population. This high density of deer is causing some resource damage.

The spread of nonnative zebra mussels into the Mississippi River and its tributaries results in adverse effects from disruption of natural lake and river ecosystems.

Alternative B would result in short-term, minor, adverse impacts and long-term, negligible, adverse impacts. When considered in combination with the above minor to moderate adverse impacts, alternative B would result in a minor to moderate, adverse cumulative impact to

fish and wildlife resources. Alternative B would provide a small adverse contribution to these effects.

Conclusion. Implementing the alternative B would result in short-term minor adverse impacts and long-term negligible adverse impacts to fish and wildlife. Cumulative effects would be minor to moderate and adverse.

Impacts of Implementing Alternative C

Some small changes to available habitat would be expected as a result of implementing alternative C.

A trail would be constructed at Sny Magill or the existing trail would be improved according to a site development plan that would be prepared for this unit. Short-term, minor, adverse impacts in the form of wildlife fear and avoidance reactions would occur during the construction phase. Long-term adverse impacts would be negligible because the trail would most likely be built near the existing trail and would be low enough that animals would have no trouble crossing it. The visitor contact station would be built on disturbed ground on acquired land and have no effect on habitat in the monument.

Construction of visitor trails would also occur in the Heritage Addition and the South Unit. Trails would be established on old logging roads in the Heritage Addition. A connecting trail from the bridge into the South Unit would be constructed.

Impacts of these actions would include loss of habitat in the construction corridors—about one acre total in addition to the one-acre parking area. Short-term impacts to wildlife would be minor and adverse during construction from the increased human presence and noise. Long-term impacts from this development, such as disturbance from trail users, are anticipated to be negligible and adverse.

Cumulative Effects. Regional wildlife populations have been affected by human activities such as agricultural, commercial, and residential lands uses and the introduction of nonnative species. Quality habitat available for wildlife has been increasingly restricted and fragmented. Hunting and the extirpation of natural predators have adversely affected population structure and dynamics of game species. There have been direct and indirect, minor to moderate, adverse impacts associated with these conditions.

Establishment of the national monument and acquisition of the Heritage Addition have resulted in long-term beneficial impacts on wildlife by preserving these pieces of habitat and eliminating hunting. However, elimination of hunting is a reason being cited by locals for the recent unnatural increase in the white-tail deer population. This high density of deer is causing some resource damage.

The spread of nonnative zebra mussels into the Mississippi River and its tributaries results in adverse effects from the disruption of natural lake and river ecosystems.

Alternative C would result in short-term, minor, adverse impacts and long-term, negligible, adverse impacts. When considered in combination with the above minor to moderate, adverse impacts, alternative C would result in a minor to moderate, adverse cumulative impact to fish and wildlife resources. Alternative C would provide a small adverse contribution to these effects.

Conclusion. Implementing alternative C would result in short-term, minor, adverse impacts and long-term, negligible, adverse impacts to fish and wildlife. Cumulative effects would be minor to moderate and adverse.

SPECIAL STATUS SPECIES

Through coordination with the U.S. Fish and Wildlife Service and the Iowa Department of Natural Resources, listed species were identified that may be located in or near the monument. Information on each species, including their preferred habitat, prey, and foraging areas was gathered. Park staff then collected more specific information such as the absence or presence of each species within the monument boundaries. Short-term impacts would last one year or less; long-term impacts would occur for more than one year. For special status species, the following impact intensities were used. These definitions are consistent with the language used to determine effects on threatened and endangered species under section 7 of the Endangered Species Act.

No effect—The action would have no effect on the special status species or critical habitat.

Negligible—The action could result in a change to a population or individuals of a species or designated critical habitat, but the change would be so small that it would not be of any consequence and would be within natural variability. This impact intensity equates to a U.S. Fish and Wildlife Service "may affect, not likely to adversely affect" determination.

Minor—The action could result in a change to a population or individuals of a species or designated critical habitat. The change would be measurable, but would be small and localized. This impact intensity equates to a U.S. Fish and Wildlife Service "may affect, not likely to adversely affect" determination.

Moderate—The action could result in a detectable change to a population or individuals of a species or designated critical habitat. Changes to the population or habitat might deviate from natural variability but the changes would not threaten the continued existence of the species in the park. This impact intensity equates to a U.S. Fish and Wildlife Service "may affect, not likely to adversely affect" or a "likely to adversely affect" determination.

Major—The action would result in a noticeable effect on the viability of a population or individuals of a species or designated critical habitat. Changes to the population or habitat would substantially deviate from natural variability and either threaten or help ensure the continued existence of the species in the park. A major adverse impact would be considered a "take" situation and would equate to a U.S. Fish and Wildlife Service "likely to adversely affect" determination.

"Not likely to adversely affect" is the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. Beneficial effects would be wholly beneficial without any adverse effects to the species. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur.

Short-term impacts are those expected to last during construction and typically up to one year—allowing for vegetation recovery and for wildlife to become accustomed to the new structure. Long-term impacts would last longer than one year.

Impacts from Implementing Alternative A

This alternative would continue current management of the national monument with no changes in wildlife or habitat management. The existing trails do not occur in habitat that is known to be used by any of the special status species.

Therefore, there would be no effect on the federal listed Higgins eye pearlymussel, Iowa Pleistocene snail, prairie bush clover, western prairie fringed orchid, northern monkshood, or state listed species.

Cumulative Effects. Habitat loss or disruption is the most common reason for a terrestrial species to become threatened or endangered. Loss or fragmentation of habitat has occurred in the region as a result of commercial and residential development, road construction, and agriculture. Incremental development continues to adversely affect the abundance and diversity of wildlife by changing the capacity of habitats to provide necessary food, shelter, and reproduction sites. Wildlife is slowly becoming more restricted by current land uses, increasing development, and human activity, causing individuals and populations to either adapt or move. This trend is anticipated to continue.
The Iowa Pleistocene snail has such stringent habitat criteria that it is especially susceptible to habitat disturbance. Although the snail has not been found on the monument, specific habitat conditions exist for its survival and these are now protected by the National Park Service.

General threats in the Driftless Area include the spraying of 2,4,5-T, a defoliant. This spraying is being done to convert forest and brush land into pasture for livestock grazing. Necessary habitat components for some species may be removed.

Establishment of the national monument and acquisition of the Heritage Addition resulted in long-term beneficial impacts on plants and animals by preserving these pieces of habitat.

Because this alternative would not contribute to the impacts of other past, present, or foreseeable future actions, there would be no project-related cumulative impacts on federal listed or other special status species.

Conclusion. The no-action alternative would have no effect on the federal listed Higgins eye pearlymussel, Iowa Pleistocene snail, prairie bush clover, western prairie fringed orchid, northern monkshood, or state listed species. There would be no project-related cumulative effects on federal listed or other special status species.

Impacts from Implementing Alternative B

Although there would be some slight changes in the development footprint under this alternative, they would not occur in known habitat for any of the listed animal species. As part of standard mitigating measures, a complete clearance of project areas would be conducted by qualified personnel prior to any construction to ensure that no special status species would be harmed.

This alternative recommends designation of the Yellow River as a national wild and scenic river. This designation would protect and preserve its free-flowing nature and habitat qualities in perpetuity, resulting in long-term beneficial impacts to aquatic special status species such as the Higgins eye pearlymussel.

Therefore, this alternative may affect, but is not likely to adversely affect, the federal listed Higgins eye pearlymussel, Iowa Pleistocene snail, prairie bush clover, western prairie fringed orchid, northern monkshood, or state listed species.

Cumulative Effects. Habitat loss or disruption is the most common reason for a terrestrial species to become threatened or endangered. Loss or fragmentation of habitat has occurred in the region as a result of commercial and residential development, road construction, and agriculture. Incremental development continues to adversely affect the abundance and diversity of wildlife by changing the capacity of habitats to

provide necessary food, shelter, and reproduction sites. Wildlife is slowly becoming more restricted by current land uses, increasing development, and human activity, causing individuals and populations to either adapt or move. This trend is anticipated to continue.

General threats in the Driftless Area include the spraying of 2,4,5-T, a defoliant. This spraying is being done to convert forest and brush land into pasture for livestock grazing. Necessary habitat components for some species may be removed by this practice.

The Iowa Pleistocene snail has such stringent habitat criteria that it is especially susceptible to habitat disturbance. Although the snail has not been found on the monument, specific habitat conditions exist for its survival and these are now protected by the National Park Service.

The impacts of other past, present, or foreseeable future actions are both beneficial and adverse, but the cumulative impacts are considered moderate and adverse. Alternative B would have a slight contribution to these effects that is both adverse and beneficial and, when considered in combination with the actions listed above, would result in a minor, adverse, cumulative impact on special status species.

Conclusion. If implemented, alternative B may affect, but is not likely to adversely affect, the federal listed Higgins eye pearlymussel, Iowa Pleistocene snail, prairie bush clover, western prairie fringed orchid, northern monkshood, or state listed species. There would be minor, adverse, cumulative effects on federal listed or other special status species.

Impacts from Implementing Alternative C

Although there would be some slight changes in the development footprint under this alternative, they would not occur in known habitat for any of the listed animal species. As part of standard mitigating measures, a complete clearance of project areas would be conducted by qualified personnel prior to any construction to ensure that no special status species would be harmed.

This alternative recommends designation of the Yellow River as a national wild and scenic river. This designation would protect and preserve its free-flowing nature and habitat qualities in perpetuity, resulting in long-term beneficial impacts to aquatic special status species such as the Higgins eye pearlymussel.

Therefore, this alternative may affect, but is not likely to adversely affect, the federal listed Higgins eye pearlymussel, Iowa Pleistocene snail, prairie bush clover, western prairie fringed orchid, northern monkshood, or state listed species.

Cumulative Effects. Habitat loss or disruption is the most common reason for a terrestrial species to become threatened or endangered. Loss or fragmentation of habitat has occurred in the region as a result of commercial and residential development, road construction, and agriculture. Incremental development continues to adversely affect the abundance and diversity of wildlife by changing the capacity of habitats to provide necessary food, shelter, and reproduction sites. Wildlife is slowly becoming more restricted by current land uses, increasing development, and human activity, causing individuals and populations to either adapt or move. This trend is anticipated to continue.

General threats in the Driftless Area include the spraying of 2,4,5-T, a defoliant. This spraying is being done to convert forest and brush land into pasture for livestock. Necessary habitat components for some species may be removed by this practice.

The Iowa Pleistocene snail has such stringent habitat criteria that it is especially susceptible to habitat disturbance. Although the snail has not been found on the monument, specific habitat conditions exist for its survival and these are now protected by the National Park Service.

The impacts of other past, present, or foreseeable future actions are both beneficial and adverse, but the cumulative impacts are considered moderate and adverse. Alternative C would have a slight contribution to these effects that is both adverse and beneficial and, when considered in combination with the actions listed above, would result in a minor, adverse, cumulative impact on special status species.

Conclusion. If implemented, alternative C may affect, but is not likely to adversely affect, the federal listed Higgins eye pearlymussel, Iowa Pleistocene snail, prairie bush clover, western prairie fringed orchid, northern monkshood, or state listed species. There would be minor, adverse, cumulative effects on federal listed or other special status species.

VISUAL RESOURCES/VIEWSHEDS

The impact intensity of a development on a viewshed depends on the type of development, its location, and what mitigation is applied. For example, a development in the foreground of a viewshed has a much larger impact than the same development located 2 or more miles away. Mitigation could involve unobtrusive design or colors. All three factors are evaluated together to determine the level of impact a proposed development would have.

For the purposes of this analysis, a *viewshed* is defined as the landscape seen from key observation points identified in the "Affected Environment" chapter of this plan. The *foreground* is defined as that part of the viewshed from the observation point to the first horizon/line of sight (e.g., a ridge top) or a line 2 miles away, whichever is closer. The *middle ground* is defined as that part of the viewshed 2 to 5 miles from the observation point. The *background* is everything more than 5 miles from the observation point.

Assessments of potential impacts on viewsheds were based on comparisons between the no-action alternative and the action alternatives. Short-term impacts would last less than one year; long-term impacts would occur for one year or more. The following intensity definitions were used.

Negligible—The action would not detract from existing natural views; proposed development in the foreground, middle ground, or background would be essentially unnoticeable.

Minor—The action would be noticeable to some observers but would not detract from natural views. There could be small changes to existing form, line, texture, or color in the background.

Moderate—The action would be noticeable to most observers and may detract from natural views in a limited portion of a viewshed. There could be modest changes to existing form, line, texture, or color in the middle ground or background.

Major—The action would be immediately noticeable and would detract from the natural setting in most of a viewshed. It would result in large changes to existing form, line, texture, or color in the foreground, middle ground, or background, or portions of the natural viewscape would be obstructed.

Impacts from Implementing Alternative A

Under alternative A, there would be no impacts on visual resources of the monument.

Cumulative Effects. Natural viewsheds enjoyed from the monument have been adversely affected by commercial and industrial development across the Mississippi River in Prairie du Chien, Wisconsin, where reflective surfaces (e.g., roofs) detract from the view. Rock and gravel mining operations also affect views from the North Unit and the approach to the Sny Magill Unit. These actions have resulted in long-term minor to moderate adverse impacts.

The agricultural practice of clearing off trees and brush from ridgetops to plant crops also affects viewsheds, but this may approximate the look of natural prairies and meadows that once occurred in the area and so may have no effect.

Establishment of the monument, Yellow River State Forest, and Pikes Peak State Park has served to create havens of nondevelopment that could become increasingly important as rural development continues to expand so they have a long-term beneficial effect.

Because this alternative would have no effect on visual resources or viewsheds, there would be no project-related cumulative effect.

Conclusion. The no-action alternative, if implemented, would have no impact on visual resources in the monument. There would be no project-related cumulative effect.

Impacts from Implementing Alternative B

Alternative B includes actions that would affect visual resources.

Construction of visitor trails would occur in the Heritage Addition and the South Unit. Trails would be established on old logging roads in the Heritage Addition. A connecting trail from the bridge into the South Unit would be constructed. Impacts would be greatest during and immediately after construction of these trails as changes occur to the line, form, and texture of the natural landscape. Once vegetation regrows around the trails, these impacts would become less noticeable. Short-term impacts to viewsheds would be minor and adverse while long-term impacts would be negligible and adverse because no more than one new trail could be seen from any observation point.

At the Sny Magill Unit, new development would include an improved trail and a visitor contact structure. The trail would be most likely placed on top of the existing trail so the short-term and long-term impacts would be negligible and adverse. The small visitor contact structure would be built on acquired land west of the unit and there would be long-term, negligible, adverse impacts expected to viewsheds from the unit.

Cumulative Effects. Natural viewsheds enjoyed from the monument have been adversely affected by commercial and industrial development across the Mississippi River in Prairie du Chien, Wisconsin, where reflective surfaces (e.g., roofs) detract from the view. Rock and gravel mining operations also affect views from the North Unit and the approach to the Sny Magill Unit. These actions have resulted in long-term minor to moderate adverse impacts.

The agricultural practice of clearing off trees and brush from ridge tops to plant crops also affects viewsheds, but this may approximate the look of natural prairies and meadows that once occurred in the area and so may have no measurable effect.

Establishment of the monument, Yellow River State Forest, and Pikes Peak State

Park has served to create havens of undeveloped areas that could become increasingly important as rural development continues to expand so they have a long-term beneficial effect.

Alternative B would have short-term and long-term, minor, adverse impacts. When considered in combination with the above minor, adverse impacts on visual resources, the alternative B would result in a minor, adverse, cumulative impact. Alternative B would have a modest adverse contribution to these effects.

Conclusion. Implementing alternative B would have short-term and long-term, negligible to minor, adverse impacts on visual resources in the monument. Cumulative effects would be minor and adverse.

Impacts from Implementing Alternative C

Alternative C includes actions that would affect visual resources.

Construction of visitor trails would occur in the Heritage Addition and the South Unit. An access trail to get visitors and monument operations into the Heritage Addition would be constructed. Additional trails would be established on old logging roads. A connecting trail from the bridge into the South Unit would be constructed. Impacts would be greatest during and immediately after construction of these trails as changes occur to the line, form, and texture of the natural landscape. Once vegetation regrows around the trails, these impacts would become less noticeable. Short-term impacts to viewsheds would be minor and adverse while long-term impacts would be negligible and adverse because no more than one new trail could be seen from any observation point.

At the Sny Magill Unit, new development would include an improved trail and a visitor contact structure. The trail would be most likely built on top of the existing trail so the short-term and long-term impacts would be minor and adverse. The small visitor contact structure would be built on acquired land west of the unit and there would be long-term, negligible, adverse impacts expected to viewsheds from the unit.

Cumulative Effects. Natural viewsheds enjoyed from the monument have been adversely affected by commercial and industrial development across the Mississippi River in Prairie du Chien, Wisconsin, where reflective surfaces (e.g., roofs) detract from the view. Rock and gravel mining operations also affect views from the North Unit and the approach to the Sny Magill Unit. These actions have resulted in long-term minor to moderate adverse impacts.

The agricultural practice of clearing off trees and brush from ridge tops to plant crops also affects viewsheds, but this may approximate the look of natural prairies and meadows that once occurred in the area and so may have no measurable effect.

Establishment of the monument, Yellow River State Forest, and Pikes Peak State Park has served to create havens of undeveloped areas that could become increasingly important as rural development continues to expand so they have a long-term beneficial effect.

Alternative C would have short-term and long-term, minor, adverse impacts. When considered in combination with the above minor, adverse impacts on visual resources, this alternative would result in a minor, adverse, cumulative impact. Alternative C would provide a modest adverse contribution to this impact.

Conclusion. Implementing alternative C would have short-term and long-term, negligible to minor, adverse impacts on visual resources in the monument. Cumulative effects would be minor and adverse.

VISITOR USE AND EXPERIENCE

METHODOLOGY

This impact analysis considers various aspects of visitor use and experience at Effigy Mounds National Monument, including visitors' ability to experience the park's primary resources and their natural and cultural settings (including vistas, natural sounds and smells, and wildlife); overall visitor access to the park; the freedom to experience the resources at one's own pace, visitor safety (both actual and perceived); opportunities for recreational activities; and opportunities for people with disabilities. The analysis is based on how visitor use and experiences would change with the way management prescriptions were applied in the alternatives. The analysis is primarily qualitative rather than quantitative due to the conceptual nature of the alternatives.

Impacts on visitor use and experience were determined considering the best available information regarding visitor use and experience.

Consultation with American Indian groups has revealed that these groups are concerned not only about the preservation of cultural resources and properties, but also about the need to interpret the sacredness of the area from an American Indian perspective.

For analysis purposes, impact duration, intensities, and types for visitor experience impact topics have been defined as follows:

Duration of Impact

A short-term impact would affect only one season's use by visitors. A long-term impact would last more than 1 year and would be more permanent in nature.

Intensity of Impact

Impacts were evaluated comparatively between alternatives, using the no-action alternative as a baseline for comparison with each action alternative:

Negligible—Visitors would likely be unaware of any effects associated with implementation of the alternative.

Minor—Changes in visitor use and/or experience would be slight but detectable, would affect few visitors, and would not appreciably limit or enhance experiences identified as fundamental to the park's purpose and significance.

Moderate—Some characteristics of visitor use and/or experience would change, and many visitors would likely be aware of the effects associated with implementation of the alternative; some changes to experiences identified as fundamental to the park's purpose and significance would be apparent.

Major—Multiple characteristics of visitor experience would change, including experiences identified as fundamental to the park's purpose and significance; most visitors would be aware of the effects associated with implementation of the alternative.

Type of Impact

Adverse impacts are those that most visitors would perceive as undesirable. Beneficial impacts are those that most visitors would perceive as desirable.

IMPACTS FROM IMPLEMENTING ALTERNATIVE A

Visitor Experience and Interaction with Resources

Continuation of current management strategies and trends with no substantial change in visitor opportunities, services, and facilities would extend currently identified impacts on the visitor experience.

The current visitor center and adjacent parking area would be maintained and subsequent noise and activity may continue to adversely impact visitor experience in the developed area. Crowding in the visitor center due to intermittent heavy visitation and educational groups, especially in inclement weather, would continue to adversely impact some visitors to the area and its resources. As the visitor center is the primary venue for visitors to receive significant personal and nonpersonal interpretive services, this would likely affect other aspects of their visit as well.

Visitors to the Heritage Addition would experience this area mainly on their own with occasional ranger-led activities and canoeing being the primary activities to interact with the resources. Some visitors to this area may experience minor adverse impacts if they attempt to explore this area without obtaining adequate wayfinding and interpretive information at the visitor center or from a ranger prior to their visit.

Visitors to the North Unit would continue to find access to personal interpretive services and nonpersonal services, mainly at the visitor center, and interpretive wayside exhibits. However, some lack of access to personal services may degrade the visitor experience by causing visitor frustration over being unable to get adequate information and interpretation they need.

The opportunity to experience a quiet contemplative setting in the South Unit would continue to be valuable to many visitors, although others may find the lack of personal services to be a minor detriment.

The Sny Magill Unit would continue to be managed primarily for resource preservation and not for visitor convenience. The opportunity to experience the mounds in this relatively primitive setting, with few park-provided amenities, would continue to be an attraction for some visitors and a detriment for others.

Opportunities are offered at all units for many types of experiences—from social interactions in developed areas to solitude in natural settings and from brief visits in visitor contact stations to extended visits exploring the grounds and trails. Continuing to have this diversity of opportunities available would result in an on-going, moderate, long-term benefit to visitors seeking experiences that meet individual needs to fit time constraints, levels of interest, educational level, or physical ability.

Orientation and Information

Continuation of current practices would provide visitors the opportunity to visit these units, but primary orientation for all the units would continue to take place at the visitor center. If visitors miss or forgo the opportunity to experience the visitor center's multifaceted interpretive opportunities and personal interactions, it could moderately affect their visit and subsequent desire to return again.

NPS staff in the visitor center provides quality orientation and information to visitors. However, some visitors tour the monument without going to the visitor center. Continuation of this situation creates a moderate beneficial long-term impact on those visitors who do go to the

center and a minor to moderate adverse impact on visitors who do not go to the center. The impact is considered adverse because they do not receive the important interpretation and orientation to fully appreciate the monument. Under this alternative, wayfinding signs would be maintained and installed where needed, which may allay some potential adverse impact on visitor experience.

Visitors to the South Unit would receive the majority of their information and interpretation through nonpersonal media including wayside exhibits and publications. Sny Magill Unit visitors would also receive the majority of their orientation and interpretation at the visitor center prior to visiting this unit.

Interpretation and Education

Existing formal and informal interpretation and resource education at the visitor center and on ranger-led activities in the various units would continue a moderate beneficial impact on visitors to the site.

At the Heritage Addition, South Unit, and Sny Magill Unit, the low level of interpretive staffing, unmarked and unmaintained trails, and the absence of access provide minimal opportunities for self-guided exploration and learning about key resources and stories at these units. Continuation of these conditions would result in a long-term minor adverse impact on visitors to these units.

Safety

Safety information would continue to be available at the visitor center and on trail signs. Lack of potable water and public restrooms may continue to present safety issues to visitors in the isolated units. South Unit trail access in the current location adjacent to the highway would continue to place visitors who choose to use these trails at risk of an automobile/pedestrian collision. Visitors who choose not to walk the trail would not have access to high-quality landscapes and the section of this unit that best reflects the moundbuilding culture.

Cumulative Effects

The lack of wayfinding guidance for visitors approaching the park from the east has and would continue to confuse some visitors. Local chambers of commerce, museums, and other attractions offer some visitor information and interpretation related to Effigy Mounds National Monument.

Visitation trends would likely increase in the long-term. This could result in congestion at parking and activity sites. Some visitors might experience a sense of crowding, especially during scheduled special events and when educational groups are visiting. Increased visitation and time spent at the national monument would result in short-term, minor, adverse impacts during events; long-term, moderate, beneficial impacts would result by development of increased or renewed public interest in the mounds and related American Indian culture.

This alternative would not result in any new actions that would contribute to these effects and so would not have any cumulative effects.

Conclusion

Implementing the no-action alternative would result in the continuation of long-term minor to moderate adverse impacts and minor beneficial impacts to aspects of visitor use and experience but would not result in any new impacts. Because actions proposed in this alternative would have no new effects on visitor use and experience, there would be no project-related cumulative impacts.

IMPACTS FROM IMPLEMENTING ALTERNATIVE B

Visitor Experience and Interaction with Resources

This alternative emphasizes enhanced visitor experience with greater understanding and protection of the area's cultural and natural resources.

The visitor center and parking area would remain at their current location. The interior of the visitor center would be reconfigured to take advantage of the extra space created by moving administrative personnel to offices in the former housing units. This move is providing additional space for modification of the exhibit, sales area, and visitor contact area. The result would be a minor beneficial impact on visitor experience due to the reduction in crowding-and enhanced visitor access to exhibits and interpretive personnel. Visitor experience would be further enhanced due to the greater depth of information and interpretive content afforded by the improved facilities and reconfigured exterior. Some short-term, adverse impacts would occur to visitor experience during remodeling construction.

The proposed trail at the Sny Magill Unit would be shorter than the existing trail and so would reduce visitors' ability to see and appreciate the whole mound group. This would create a minor, long-term, adverse impact on visitor experience and understanding.

Visitors to the Heritage Addition would experience this area mainly on their own. Primary activities would include hiking, wildlife viewing, and canoeing, with occasional ranger-conducted activities. Visitors would receive the majority of orientation and initial interpretation at the visitor center, to avoid impacting the contemplative nature of the site. Visitor experiences at this unit would be moderately enhanced via the trails and improved information available at the visitor center, however, visitors may continue to experience minimal adverse impacts if they access the area without experiencing the visitor center first, due to lack of information. Educational experiences utilizing the Yellow River and adjacent wetlands would offer enhanced educational opportunities as well. Visitors to the North Unit would encounter greater opportunities to experience and understand the park resources through enhanced personal services including ranger-guided hikes and talks. Visitor experience would be further enhanced by extension and realignment of some trails, accompanied by appropriate upgrades and renovations of nonpersonal interpretive media. Visitor experiences at this unit would be moderately enhanced via the expanded information and interpretation available at the improved visitor center, however Visitors may continue to experience minimal adverse impacts if they access the area without experiencing the visitor center first. Visitors to the South Unit would continue to receive the majority of their information and interpretation through nonpersonal media including wayside exhibits and publications. Visitor experience would be moderately enhanced by extension and realignment of some trails, upgrades and renovations of nonpersonal interpretive media, and the opportunity to understand the influence that the natural world had on the moundbuilders. Additionally, visitors would be better able to explore and understand the 19th century American Indian culture. The opportunity to experience a quiet contemplative setting would continue to be valuable to many visitors, although some may find the lack of personal services to be a minor detriment.

The Sny Magill Unit would continue to be managed for resource preservation, however interpretation of the site would expand. Visitor use would continue to be somewhat limited and resources would be monitored to protect them from visitor impacts. A visitor contact station would be

established near the unit and visitors would benefit from increased personal services, including ranger-guided walks and demonstrations. Some nonpersonal services like wayside exhibits and expanded publications would be created and distributed, but these services would be introduced so as not to impact the scene. Visitor experience would receive a minor, beneficial impact from these changes and additions.

Opportunities would increase in all units for many types of experiences—from social interactions in developed areas to solitude in natural settings and from brief visits in visitor contact stations to extended visits exploring the grounds and trails. An expanded diversity of opportunities available would result in an on-going moderate long-term benefit to visitors seeking experiences that meet individual needs to fit time constraints, levels of interest, educational level, or physical ability.

Orientation and Information

The expansion of nonpersonal interpretive media in the North, South, Heritage and Sny Magill units and providing a visitor contact station at the Sny Magill Unit would improve orientation and interpretive opportunities for visitors, especially those who do not experience a primary orientation at the visitor center. Visitors who miss or forgo the opportunity to experience the visitor center's multifaceted interpretive opportunities and personal interactions could still experience a minor, adverse impact during their visit, but the overall experience for the majority of park visitors would show minor to moderate improvement. Some of this impact may also be offset by the use of new technology to enhance the visitor's experience in pre-trip planning and at the site.

Under this alternative, primary orientation for the monuments would be at the renovated visitor center. The central location of the visitor center would provide opportunity for visitors who arrive at the center before visiting other units to acquire the information needed to decide what type of visit they would enjoy and which zone(s) would accommodate them the best. The visitor contact facility at the Sny Magill Unit would provide specific unit information and orient visitors to the site and the other units. This combination of renovated visitor facilities would result in a moderate, long-term, beneficial impact for visitors who utilized the contact center prior to exploring the other units.

Interpretation and Education

Enhanced formal and informal interpretation and resource education at the visitor center, at the visitor contact station in Sny Magill, and on ranger-led activities in the various units would create a minor, beneficial impact on visitors to the site. The reduction in crowding at the reconfigured main visitor center and enhanced visitor access to exhibits and interpretive personnel would produce a minor, beneficial impact on visitor experience there.

At the Heritage Addition, South Unit, and Sny Magill Unit, the higher level of interpretive staffing, new trails, and the enhanced nonpersonal interpretive media would expand opportunities for self-guided exploration and learning about key resources and stories at these units. An expansion of the resource education program in concert with the new research center would greatly benefit visitors, students, and researchers. These changes would result in a long-term, major, beneficial impact on most visitors and their experience here.

Two additional interpretive division employees would be needed to staff these units year-round in this alternative.

Safety

Safety information would continue to be available at the visitor center, at the new visitor contact station in the Sny Magill Unit and from renovated orientation and information signs in all of the park's units. Lack of potable water and public restrooms would continue to present safety issues to visitors at the isolated units.

Some visitors might still experience a sense of crowding, especially during scheduled special events and when there is a concentration of school children in that area. Increases in visitation and time spent at the national monument would result in short-term, minor, adverse impacts during these events.

Cumulative Effects

Some lack of wayfinding guidance for visitors approaching the park from the east may confuse some visitors. The number of state and county parks and forests in the region may cause some visitors to be unaware that Effigy Mounds is a national monument managed by the National Park Service. This could be partially offset by the information provided by local chambers of commerce, museums, and other attractions.

Visitation trends would likely increase in the long-term. This could result in congestion at parking and activity sites. Some visitors might experience a sense of crowding, especially during scheduled special events and when educational groups are visiting. Increased visitation and time spent at the national monument would result in short-term minor adverse impacts during events; long-term moderate beneficial impacts would result by development of increased or renewed public interest in the mounds and related American Indian culture.

Future development on private land at the national monument's borders would adversely impact the scenic views as well as cause sound encroachment, adversely affecting visitor experience.

When the beneficial and adverse impacts discussed above are considered in combination with the moderate beneficial impacts of this alternative, the resulting cumulative effects on the visitor experience would be long term, moderate, and beneficial. This alternative's contribution to these effects would be modest.

Conclusion

Implementing alternative B would result in several minor, long-term, beneficial impacts and a long-term minor adverse effect on the visitor experience. The overall cumulative impacts would be long-term, minor, and beneficial, and this alternative's contribution to these effects would be modest.

IMPACTS FROM IMPLEMENTING ALTERNATIVE C

Visitor Experience and Interaction with Resources

This alternative emphasizes enhanced visitor experience with greater understanding and protection of the area's cultural and natural resources. The construction of a regional research center would solidify the monument's pivotal role in mound research and management, greatly enhancing the interpretive division's ability to work more effectively with other divisions in revealing resource meanings and creating expanded opportunities for superior visitor experiences.

The visitor center and parking area would remain at their current location. The interior of the visitor center would be reconfigured to take advantage of the extra space created by moving the administrative

personnel to offices in the former housing units. This move is providing additional space for modification of the exhibit, sales area, and visitor contact area. The result would produce a minor, beneficial impact on visitor experience due to the reduction in crowding and the enhanced visitor access to exhibits and interpretive personnel. Visitor experience would be further enhanced due to the greater depth of information and interpretive content afforded by the improved facilities and reconfigured exterior. Some short-term adverse impacts would occur to visitor experience during remodeling construction.

Expanded visitor access to the mound groups, notably the groups at the Sny Magill Unit, with enhanced accessibility, would contribute to a greater diversity of visitor experience and greater insight into the natural and cultural resources preserved in the monument. The quality of visitor experience would continue to be enhanced by encouraging a quiet and contemplative exploration of the monument's resources. Combined, this would create a major long-term beneficial impact on visitor experience and understanding.

Visitors to the Heritage Addition would experience this area mainly on their own. Primary activities would include hiking, wildlife viewing, and canoeing, with occasional ranger-conducted activities. Visitors would receive the majority of orientation and initial interpretation at the visitor center, to avoid impacting the contemplative nature of the site. Visitor experiences at this unit would be moderately enhanced via the trails and improved information available at the visitor center, however, visitors may continue to experience minimal adverse impacts if they access the area without experiencing the visitor center first, due to lack of information. Educational experiences utilizing the Yellow River and adjacent wetlands would offer enhanced educational opportunities as well.

Visitors to the North Unit would encounter greater opportunities to experience and understand the park resources through enhanced personal services including ranger-guided hikes and talks. Visitor experience would be further enhanced by extension and realignment of some trails, accompanied by appropriate upgrades and renovations of nonpersonal interpretive media. Visitor experiences at this unit would be enhanced via the expanded information and interpretation available at the improved visitor center, however visitors may continue to experience minimal adverse impacts if they access the area without experiencing the visitor center first.

Visitors to the South Unit would continue to receive the majority of their information and interpretation through nonpersonal media including wayside exhibits and publications. Visitor experience would be moderately enhanced by extension and realignment of some trails, upgrades and renovations of nonpersonal interpretive media, and the opportunity to understand the influence that the natural world had on the moundbuilders. Additionally, visitors would be better able to explore and understand the 19th century American Indian culture. The opportunity to experience a quiet contemplative setting would continue to be valuable to many visitors, although some may find the lack of personal services to be a minor detriment.

The Sny Magill Unit would continue to be managed for resource preservation, however visitor access to and interpretation of the site would expand. Visitor use would continue to be somewhat limited and resources would be monitored to protect them from visitor impacts. A visitor contact station would be established and visitors would benefit from increased personal services, including ranger-guided walks and demonstrations. Some nonpersonal services like wayside exhibits and expanded publications would be created and distributed, but these services would be introduced so as not to impact

the scene. Visitor experience would be moderately enhanced by these changes and additions.

Opportunities would increase in all units for many types of experiences—from social interactions in developed areas to solitude in natural settings and from brief visits in visitor contact stations to extended visits exploring the grounds and trails. An expanded diversity of opportunities available would result in an on-going moderate long-term benefit to visitors seeking experiences that meet individual needs to fit time constraints, levels of interest, educational level, or physical ability.

Orientation and Information

The expansion of nonpersonal interpretive media in the North Unit, South Unit, Heritage Addition, and Sny Magill Unit and providing a visitor contact station at the Sny Magill Unit would improve orientation and interpretive opportunities for visitors, especially those who do not experience a primary orientation at the visitor center. Visitors who miss or forgo the opportunity to experience the visitor center's multifaceted interpretive opportunities and personal interactions could still experience a minor, adverse impact during their visit, but the overall experience for the majority of park visitors would show a minor improvement. The use of new technology would enhance the visitor's experience in pre-trip planning and at the site.

Under this alternative, primary orientation for the monument would be at the renovated visitor center. The central location of the visitor center would provide opportunity for visitors who arrive at the center before visiting other units to acquire the information needed to decide what type of visit they would enjoy and which zone(s) would accommodate them the best. The small visitor contact facility at the Sny Magill Unit would provide specific unit information and orient visitors to the site, the off-site visitor center, and the other units. This combination of renovated visitor facilities would create a moderate long-term beneficial impact for visitors who utilized these two contact centers prior to exploring the other units.

Interpretation and Education

Enhanced formal and informal interpretation and resource education at the visitor center, at the visitor contact station in the Sny Magill Unit, and on ranger-led activities in the various units would create a moderate to major beneficial impact on visitors to the site. The reduction in crowding at the primary visitor center and enhanced visitor access to exhibits and interpretive personnel would produce a minor beneficial impact on visitor experience there.

At the Heritage Addition, South Unit, and Sny Magill Unit, the higher level of interpretive staffing, upgraded and re-routed trails and viewing platforms, and the enhanced nonpersonal interpretive media would expand opportunities for self-guided exploration and learning about key resources and stories at these units. These changes would result in a long-term minor beneficial impact on most visitors and their experience here.

Two additional interpretive division employees would be needed to staff these units year-round in this alternative.

Safety

Safety information would continue to be available at the visitor center, at the new visitor contact station in the Sny Magill Unit and from renovated orientation and information signs in all of the park's units. Lack of potable water and public restrooms would continue to present safety issues to visitors at the isolated units. Some visitors might still experience a sense of crowding, especially during scheduled

special events and when there is a concentration of school children in that area. Increases in visitation and time spent at the national monument would result in short-term, minor, adverse impacts during these events.

Cumulative Effects

Some lack of wayfinding guidance for visitors approaching the park from the east may confuse some visitors. The number of state and county parks and forests in the region may cause some visitors to be unaware that Effigy Mounds is a national monument managed by the National Park Service. This could be partially offset by the information provided by local chambers of commerce, museums, and other attractions.

Visitation trends would likely increase in the long-term. This could result in congestion at parking and activity sites. Some visitors might experience a sense of crowding, especially during scheduled special events and when educational groups are visiting. Increased visitation and time spent at the national monument would result in short-term minor adverse impacts during events; long-term moderate beneficial impacts would result by development of increased or renewed public interest in the mounds and related American Indian culture.

Future development on private land at the national monument's borders would adversely impact the scenic views as well as cause sound encroachment, adversely affecting visitor experience.

When the beneficial and adverse impacts discussed above are considered in combination with the moderate beneficial impacts of this alternative, the resulting cumulative effects on the visitor experience would be long term, moderate, and beneficial. This alternative's contribution to these effects would be modest.

Conclusion

Implementing alternative C would result in minor, long-term, beneficial impacts on the visitor experience. The overall cumulative impacts would be long-term, minor, and beneficial and this alternative's contribution to these effects would be modest.

SOCIOECONOMIC ENVIRONMENT

METHODOLOGY

The National Park Service applied logic, experience, and professional judgment to analyze the impacts on the social and economic situation resulting from each alternative. Economic data, historic visitor use data, expected future visitor use, and future developments of the national monument were all considered in identifying, discussing, and evaluating expected impacts.

Duration of Impact

In general, short-term impacts are temporary in duration and typically are transitional effects associated with implementation of an action (e.g., related to construction activities) and are less than 1 year. In contrast, long-term impacts extend beyond 1 year (e.g., operational activities) or have a permanent effect on the socioeconomic environment.

Intensity of Impact

Assessments of potential socioeconomic impacts were based on comparisons between the no-action alternative and each of the action alternatives.

Negligible—The effects on socioeconomic conditions would be below or at the level of detection.

Minor—The effects on socioeconomic conditions would be slight but detectable, and only affect a small portion of the surrounding population. The impact would be considered slight and not detectable outside the affected area.

Moderate—The effects on socioeconomic conditions would be readily apparent. Any effects would result in changes to socioeconomic conditions on a local scale in the affected area.

Major—The effects on socioeconomic conditions would be readily apparent. Measurable changes in social or economic conditions at the county level occur. The impact is severely adverse or exceptionally beneficial in the affected area.

Type of Impact

National Park Service policy calls for the effects of the alternatives to be characterized as being beneficial, adverse, or indeterminate in nature. With respect to economic and social effects, few standards or clear definitions exist as to what constitutes beneficial changes, and what constitutes adverse changes. For example, rising unemployment is generally perceived as adverse, while increases in job opportunities and average per capita personal income are regarded as beneficial. In many instances, however, changes viewed as favorable by some members of a community are seen as unfavorable by others. For example, the impact of growth on housing markets and values may be seen as favorable by construction contractors and many homeowners, but adverse by renters and by local government officials and community groups concerned with affordability. Consequently, some of the social and economic impacts of the alternatives are described in such a manner as to allow the individual reader to determine whether they would be beneficial or adverse (impact is indeterminate with respect to “type”).

IMPACTS FROM IMPLEMENTING ALTERNATIVE A

The no-action alternative would have a slight effect on the regional economy. A connecting trail from the bridge into the South Unit would be constructed under this alternative. This would be a short-term, negligible to minor, beneficial economic impact because of the materials that would be purchased locally and because of possible construction contracts.

Implementing this alternative would continue the input of federal dollars into the region in the forms of employee wages and the purchase of supplies and materials. This is estimated to be $20.9 million over the next 20 years.

The average length of time of a visit or length of stay in the region would not likely change. Visitors would continue to visit the national monument in the same manner and experience the same social conditions.

Cumulative Effects

The social and economic situation in Allamakee, Clayton, and Crawford counties is affected by a combination of many factors, including the presence of a unit of the National Park Service. Some of the $300 million in federal spending in the three counties is generated by Effigy Mounds National Monument, such as in the forms of employee wages and construction contracts. The livelihoods of service-related businesses in the region rely to some degree on the inflow of tourist dollars, especially to restaurants and motels. Although tourism is not the most important driving factor in the regional economy, the nationwide downward trend in national park visitation may be adversely affecting tourism-dependent businesses on a negligible level.

The total direct economic value of public recreation areas also includes two sets of values: (1) the user benefit that people receive from their visit; and (2) the values capitalized in land near the recreation area. Economic studies have shown that the value of land can increase with the number of outdoor recreation opportunities and the proximity to outdoor recreation space (Clawson and Knetsch 1966). Therefore, the continued presence of Effigy Mounds National Monument provides an important benefit to the people and property values in the vicinity.
The no-action alternative would contribute a slight beneficial amount to the above impacts of past, present, and future actions on socioeconomic conditions and, when considered in combination with other actions, would result in a minor beneficial cumulative impact.

Conclusion

Implementing the no-action alternative would have a short-term, negligible to minor, beneficial economic impact in the region. The overall cumulative effects would be minor and beneficial.

IMPACTS FROM IMPLEMENTING ALTERNATIVE B

Full implementation of this alternative would require the National Park Service to hire five and a half additional employees to handle the increased workload for cultural resources, law enforcement, interpretation, and maintenance. Additional employment would bring in more wages and an increased demand for housing, utilities, services, and goods, resulting in a long-term, minor benefit for the local economy.

Construction contracts might be let for several trail segments and the Sny Magill visitor contact structure. This would result in a short-term, minor, beneficial economic impact.

Implementing the alternative B is estimated to cost a total of $8.3 million above the current level of spending over the next 20 years. Most of this total would equate to an increase in the input of federal dollars into the region in the forms of employee wages and the purchase of supplies, materials, and construction contracts. This would be a long-term, minor to moderate, beneficial impact.

If all the boundary adjustments recommended in this plan were to take place, Allamakee County could lose about $3,225 in annual property taxes and Clayton County could lose about $1,250 in annual property taxes. The U.S. Government sometimes makes payments in lieu of taxes to local counties to reimburse them for land acquired by the federal government from private ownership. The impact from this action to the local economy is expected to be long-term, negligible, and adverse.

The number of visitors and average length of visit could increase due to the additional experience opportunities in the Heritage Addition and Sny Magill Unit. Local businesses that rely on the tourist trade would receive a long-term minor benefit. For example, if visitation to the monument were to increase by 10%, about $240,000 would be added to the local economy through direct and indirect visitor spending each year.

Cumulative Effects

The social and economic situation in Allamakee, Clayton, and Crawford counties is affected by a combination of many factors, including the presence of a unit of the National Park Service. Some of the $300 million in federal spending in the three counties is generated by Effigy Mounds National Monument in the forms of employee wages and construction contracts for example. The livelihoods of service-related businesses in the region rely to some degree on the inflow of tourist dollars, especially to restaurants and motels. Although tourism is not the most important driving factor in the regional economy, the nationwide downward trend in national park visitation may be adversely affecting tourism-dependent businesses on a negligible level.

The total direct economic value of public recreation areas also includes two sets of values: (1) the user benefit that people receive from their visit; and (2) the values capitalized in land near the recreation area. Economic studies have shown that the value of private land can increase with the number of outdoor recreation opportunities and the proximity to outdoor recreation space (Clawson and Knetsch 1966). Therefore, the continued presence of Effigy Mounds National Monument provides an important benefit to the people and property values in the vicinity.

Alternative B would have short-term and long-term, moderate, beneficial economic impacts. When added to the above impacts of other past, present, and future actions on socioeconomic conditions, this alternative would result in a minor, beneficial cumulative impact. Alternative B would contribute a modest beneficial increment to this impact.

Conclusion

Implementing the alternative B would have short-term and long-term, minor, beneficial economic impacts in the region. The overall cumulative effects would be minor and beneficial.

IMPACTS FROM IMPLEMENTING ALTERNATIVE C

Full implementation of this alternative would require the National Park Service to hire eight and a half additional employees to handle the increased workload for

cultural resources, law enforcement, IT, natural resources, interpretation, and maintenance. Additional employment would bring in more wages and an increased demand for housing, utilities, services, and goods, resulting in a long-term, minor benefit for the local economy.

Construction contracts would be let for several trail segments and the Sny Magill visitor contact structure. This would result in a short-term, minor, beneficial economic impact. With the National Park Service leasing space for the research center, a long-term, minor, economic benefit would result from the additional input of federal dollars into the economy.

Implementing alternative B is estimated to cost a total of $11.2 million above the current level of spending over the next 20 years. Most of this total would equate to an increase in the input of federal dollars into the region in the forms of employee wages and the purchase of supplies, materials, and construction contracts. This would be a long-term, minor to moderate, beneficial impact.

If all the boundary adjustments recommended in this plan were to take place, Allamakee County could lose about $3,225 in annual property taxes and Clayton County could lose about $1,250 in annual property taxes. The U.S. Government sometimes makes payments in lieu of taxes to local counties to reimburse them for land acquired by the federal government from private ownership. The impact from this action to the local economy is expected to be long-term, negligible, and adverse.

The number of visitors and average length of visit could increase due to the additional experience opportunities in the Heritage Addition and Sny Magill Unit. Local businesses that rely on the tourist trade would receive a long-term minor benefit. For example, if visitation to the monument were to increase by 10%, about $240,000 would be added to the local economy through direct and indirect visitor spending each year.

Cumulative Effects

The social and economic situation in Allamakee, Clayton, and Crawford counties is affected by a combination of many factors, including the presence of a unit of the National Park Service. Some of the $300 million in federal spending in the three counties is generated by Effigy Mounds National Monument in the forms of employee wages and construction contracts for example. The livelihoods of service-related businesses in the region rely to some degree on the inflow of tourist dollars, especially to restaurants and motels. Although tourism is not the most important driving factor in the regional economy, the nationwide downward trend in national park visitation may be adversely affecting tourism-dependent businesses on a negligible level.

The total direct economic value of public recreation areas also includes two sets of values: (1) the user benefit that people receive from their visit and (2) the values capitalized in land near the recreation area. Economic studies have shown that the value of private land can increase with the number of outdoor recreation opportunities and the proximity to outdoor recreation space (Clawson and Knetsch 1966). Therefore, the continued presence of Effigy Mounds National Monument provides an important benefit to the people and property values in the vicinity.

Alternative C would have short-term and long-term, moderate, beneficial economic impacts. When added to the above impacts of other past, present, and future actions on socioeconomic conditions, alternative C would result in a minor, beneficial, cumulative impact. Alternative C would contribute a modest beneficial increment to this cumulative impact.

Conclusion

Implementing alternative C would have short-term and long-term, minor, beneficial economic impacts in the region. The overall cumulative effects would be minor and beneficial.

MONUMENT OPERATIONS AND FACILITIES

METHODOLOGY

The analysis was conducted in terms of how monument operations and facilities might vary under the different management alternatives. The analysis is qualitative rather than quantitative because of the conceptual nature of the alternatives. Consequently professional judgment was used to reach reasonable conclusions as to the intensity, duration, and type of potential impact. The impact analysis evaluated the effects of the alternatives on staffing, infrastructure, visitor facilities, and services.

Duration of Impact

Short-term impacts would be less than 2 years since most planning, design, and construction is generally completed within 2 years. Long-term impacts would extend beyond 2 years.

Intensity of Impact

Negligible—Park operations would not be affected or the effect would be at or below the lower levels of detection, and would not have an appreciable effect on park operations.

Minor—The effect would be detectable, but would be of a magnitude that would not have an appreciable effect on park operations.

Moderate—The effect would be readily apparent and would result in a substantial change in park operations in a manner noticeable to staff and the public.

Major—The effect would be readily apparent and would result in a substantial change in park operations in a manner noticeable to staff and the public and be markedly different from existing operations.

Type of Impact

Beneficial impacts would improve NPS operations and/or facilities. Adverse impacts would negatively affect NPS operations and/or facilities and could hinder the staff's ability to provide adequate services and facilities to visitors and employees. Some impacts could be beneficial for some operations or facilities and adverse or negligible for others.

IMPACTS FROM IMPLEMENTING ALTERNATIVE A

Under the no-action alternative, management and operations of Effigy Mounds National Monument would continue as they are now. The Heritage Addition would continue to be managed on a day-to-day basis without the guidance of a comprehensive long-range plan.

Crowding in the visitor center during visits from large groups would continue to hinder staff work at those times. Staffing levels, particularly in cultural and natural resources management, would continue to be inadequate for current and future workloads. Office space and working conditions in the headquarters / visitor center building would become cramped if any additional staff were hired, reducing productivity and efficiency.

All maintenance facilities would remain at their current location in the monument. Operations staff would continue to shuttle equipment back and forth to the North Unit, causing wear on equipment and loss of efficiency.

This alternative would create no new impacts but would result in the continuation of long-term minor adverse impacts to monument operations.

Cumulative Effects

In general, NPS staff members are faced with increasing workloads as a result of new NPS initiatives, program mandates, and reporting requirements. Acquiring the Heritage Addition almost doubled the size of the national monument, subsequently increasing the management workload without any staffing increase, a minor adverse effect.

Past and ongoing projects have had impacts on monument operations and facilities such as construction and maintenance of trails, fences, roads, and other monument infrastructure. Aging facilities (e.g., trails, pavement, etc.) and utilities would continue to be repaired or replaced as needed when funds become available. Eventually, more sustainable and efficient facilities and utility systems would replace aging systems, resulting in minor to moderate, beneficial impacts over the long-term.

This alternative would not contribute any new effects to the minor adverse effects and minor to moderate beneficial effects of other past, present, or foreseeable future actions, so there would be no project-related cumulative effects.

Conclusion

The no-action alternative, if implemented, would cause no new impacts on monument operations and facilities. Thus, there would be no project-related cumulative effects.

IMPACTS FROM IMPLEMENTING ALTERNATIVE B

Implementing alternative B would result in changes to NPS staffing, workloads, and facility maintenance. It would require five and a half additional employees to handle the increased workload for cultural resources, natural resources, law enforcement, interpretation, and maintenance.

In addition to ongoing tasks, facility management personnel would be required to coordinate and oversee construction of the Sny Magill contact station, the remodeling of the visitor center, and trail work. This could cause short-term, minor, adverse impacts on operations. Since there would be few new trails (existing roads would be used wherever possible), the impact of additional trail maintenance is expected to be minor.

Under this alternative, the short access road in the northernmost part of the monument would be no longer available to maintenance staff. This would cause additional workload as maintenance personnel and equipment would have to be walked in a longer distance. This would result in short and long-term impacts that are minor and adverse.

Cumulative Effects

In general, NPS staff members are faced with increasing workloads as a result of new NPS initiatives, program mandates, and reporting requirements. Acquiring the Heritage Addition almost doubled the size of the national monument, consequently increasing the management workload. Static base funding levels preclude hiring additional staff to alleviate the workload. Past and ongoing projects have had impacts on monument operations and facilities such as construction and maintenance of trails, fences, roads and other monument infrastructure.

Aging facilities (e.g., trails, pavement, etc.) and utilities would continue to be repaired or replaced as needed when funds become available. Eventually, more sustainable and efficient facilities and utility systems would replace aging systems, resulting in minor to moderate, beneficial impacts over the long term.

Alternative B would contribute substantial beneficial and adverse effects to the minor adverse effects of other past, present, and foreseeable future actions. However, the beneficial effects would outweigh the adverse effects, resulting in cumulative effects that are negligible.

Conclusion

Implementing the alternative B would result in short-term and long-term, minor, adverse impacts to monument operations and facilities. Cumulative effects would be negligible.

IMPACTS FROM IMPLEMENTING ALTERNATIVE C

Implementing this alternative would result in changes to NPS staffing, workloads, and facility maintenance. It would require eight and a half additional employees to handle the increased workload for cultural resources, natural resources, law enforcement, interpretation, IT, and maintenance.

In addition to ongoing tasks, facility management personnel would be required to coordinate and oversee construction of the Sny Magill contact station, the remodeling of the visitor center, and trail work. This could cause short-term, minor, adverse impacts on operations. Since there would be few new trails (existing roads would be used wherever possible), the impact of additional trail maintenance is expected to be minor.

It is unknown at this time how the requirement for more coordination between the maintenance and resource management staff would affect operational efficiency.

Cumulative Effects

In general, NPS staff members are faced with increasing workloads as a result of new NPS initiatives, program mandates, and reporting requirements. Acquiring the Heritage Addition almost doubled the size of the national monument, consequently increasing the management workload. Static base funding levels preclude hiring additional staff to alleviate the workload. Past and ongoing projects have had impacts on monument operations and facilities such as construction and maintenance of trails, fences, roads and other monument infrastructure.

Aging facilities (e.g. trails, pavement, etc.) and utilities would continue to be repaired or replaced as needed when funds become available. Eventually, more sustainable and efficient facilities and utility systems would replace aging systems, resulting in minor to moderate, beneficial impacts over the long term.

Alternative C would contribute substantial beneficial and adverse effects to the minor adverse effects of other past, present, and foreseeable future actions. However, the beneficial effects would outweigh the adverse effects, resulting in cumulative effects that are negligible.

Conclusion

Implementing alternative C would result in short-term and long-term, minor, adverse impacts to monument operations and facilities. Cumulative effects would be negligible.

NATURAL OR DEPLETABLE RESOURCES AND ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

INTRODUCTION

Whenever feasible, the National Park Service strives to maximize the use of renewable resources and energy and therefore minimize the use of depletable resources. However, it is not possible with today's technologies to cost-effectively avoid all use of depletable resources in building and operating facilities. According to the U.S. Department of Energy's Energy Information Administration, between 1986 and 1992, energy used in commercial buildings in this country grew by about 20% or 3%–4% a year. While energy efficiency has increased in recent years, the demand for energy has increased at a higher rate, so that the amount of energy used in the United States continues to climb every year. Any of the action alternatives at Effigy Mounds would, of course, add very little to the cumulative increase in energy use in the commercial building sector when viewed nationwide (in 1992, there were nearly 70 billion square feet of commercial buildings in the United States).

The National Park Service has adopted the concept of sustainable design as a guiding principle of facility planning and development (NPS *Management Policies 2006,* section 9.1.1.7). The objectives of sustainability are to design facilities to minimize adverse effects on natural and cultural values, to reflect their environmental setting, and to maintain and encourage biodiversity; to operate and maintain facilities to promote their sustainability; and to illustrate and promote conservation principles and practices through sustainable design and ecologically sensitive use. Essentially, sustainability is the concept of living within the environment with the least impact on the environment.

Unlike most other impact topics, impacts to depletable resources and energy would not be realized within Effigy Mounds National Monument. Rather, these impacts would be felt at the point of extraction (at mining sites, for example), in communities where manufactured products and energy are produced, and in those areas through which resources and fuel are transported. Impacts from use of depletable resources and energy are also felt globally through climate change.

Because each of the action alternatives includes some level of construction, they both would impact natural or depletable resources and energy to some extent. In all alternatives, best management practices would be employed and new facilities would be designed with long-term sustainability in mind. Assets that support visitor use and resource protection, such as parking lots, trails, and monument roads, also potentially use depletable resources to some extent. The monument staff's practice is to use wood chips from felled trees (a renewable resource) for trails, so increases or decreases in the number of trails would not impact depletable resource or energy use. Generally, buildings require the largest amount of resources and energy used in a park this size. The energy need relates to the building's size. Therefore, the change in the amount of square footage in buildings is used in this analysis to determine the relative level of resource and energy use by the monument.

ALTERNATIVE B

The visitor center would be reconfigured, but space would not be added—the facility would remain at about 10,000 square feet. The newer maintenance building would

remain as is (about 3,500 square feet). The visitor contact station (a maximum of 2,600 square feet indoors) that would be established at the Sny the Magill Unit would be a designed to minimize energy use.

Overall, these actions, guided by the latest sustainable design principles, would have a negligible impact on energy needs in the region.

ALTERNATIVE C

As in alternative B, the visitor center would be reconfigured, but space would not be added (so it would remain at about 10,000 square feet). The newer maintenance building would remain as is (about 3,500 square feet). The visitor contact station (a maximum of 2,600 square feet indoors) that would be established at the Sny the Magill Unit would be a designed to minimize energy use.

The research center (which includes storage for museum collections) proposed under this alternative would not be a park development but would be leased space in a local community. It is unknown where or how this would be accomplished. If this leased space was in an existing building, there would be no or negligible new effect on depletable resources or energy use in the region. If this space were in a new structure (built for the General Services Administration or a private entity), there would be both a one-time commitment of natural or depletable resources for construction and a long-term energy requirement for operation. The energy needed to light, heat, and cool the estimated 2,700-square-foot building would vary according to the design and whether the National Park Service was the only tenant. However, NPS policy requires a new building to be designed and built with sustainability in mind, which would reduce the overall energy need.

Overall, these actions, guided by the latest sustainable design principles, would have a negligible impact on energy needs in the region.

CLIMATE CHANGE

BACKGROUND

Related to the energy discussion is climate change, the human-cause change to global climate patterns. Climate change is perhaps the most far-reaching and irreversible threat the national park system has ever faced (NPCA 2007). Climate change in this context refers to a suite of changes occurring in Earth's atmospheric, hydrologic, and oceanic systems. These changes, including increased global air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level, provide unequivocal evidence that the climate system is warming. While the warming trend, commonly referred to as global warming, is discernible over the entire past century and a half, recent decades have exhibited an accelerated warming rate with 11 of the last 12 years ranking among the 12 warmest years on record. Most of the observed temperature increase can be attributed to human activities that contribute heat trapping gases to the atmosphere. These "greenhouse gases"—particularly carbon dioxide from the burning of fossil fuels—cause Earth's atmosphere to act like a blanket and trap the sun's heat. While the insulating effect (or greenhouse effect) of our atmosphere is important to living systems, the rapid increase in greenhouse gases since the middle of the 19th century has cased temperatures to increase at a rate faster than natural systems can adapted to.

While climate change is a global phenomenon, it manifests itself differently in different places. One of the most dramatic effects of global warming is the impact on extreme weather events. A disrupted climate could affect natural and cultural resources, and is likely to interfere with public use and enjoyment of the parks. Although many places in the world have already observed and recorded changes that can be attributed to climate change, the impacts to Effigy Mounds National Monument have not been specifically determined and the actual implications within the lifespan of this general management plan are unknown. While it is well accepted that climate change is occurring, it is unknown as to the rate and severity of impacts at the parks. Climate change is a long-term phenomenon, and the likelihood that significant effects would be seen during the life of this general management plan (15–20 years) is unknown at this time; however, acceleration of climate change impacts could have a more immediate effect on park resources and values.

RELEVANT LAWS AND POLICIES

Executive Order 13423—Issued on January 24, 2007, by President George W. Bush, this executive order requires federal agencies to "conduct their environmental, transportation, and energy-related activities under the law in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner." It includes requirements for the reduction of greenhouse gases and implementation of other energy and water conservation measures. The order requires agencies to reduce greenhouse gas emissions by 3% annually through the end of fiscal year 2015, or 30% by the end of fiscal year 2015, relative to the baseline of the agency's energy use in fiscal year 2003.

DOI Secretarial Order 3226—Issued on January 19, 2001, this order ensures that climate change impacts are taken into account in connection with departmental planning and decision making.

NPS *Management Policies 2006*, section 4.7.2 states that "Parks containing significant natural resources will gather and maintain baseline climatological data for reference." The policies also state that "The Service will use all available authorities to protect park resources and values from potentially harmful activities . . . NPS managers must always seek ways to avoid, or minimize to the greatest degree possible, adverse impacts on park resources and values."

Section 9.1.1.6 of NPS *Management Policies 2006* discusses sustainable energy design, requiring any facility development to include improvements in energy efficiency and reduction in greenhouse gas emissions for both the building envelope and the mechanical systems that support the facility. Additionally, projects that include visitor centers or major visitor services facilities must incorporate Leadership in Energy and Environmental Design (LEED) standards to achieve a silver rating.

Section 9.1.7 of NPS *Management Policies 2006* requires the National Park Service to interpret for the public the overall resource protection benefits from the efficient use of energy, and to actively educate and motivate park personnel and visitors to use sustainable practices in conserving energy.

Any of the action alternatives at Effigy Mounds would, of course, have very little effect on the cumulative level of greenhouse gases or other climate change factors (e.g. carbon footprint) when viewed nationwide. However, there are several management directions that could occur that would reduce the monument's contribution to climate change. Examples of these include replacing the monument's current fleet of vehicles and motorized equipment with more fuel-efficient models, adding insulation and weather-proofing to existing buildings, employing solar panels to generate electricity, etc. New developments, such as the contact station at Sny Magill, would be constructed with energy efficiency (i.e. sustainability) in mind. As part of a National Park Service-wide initiative, the public would receive educational messages about reducing our impact on the climate. These programs and others would be implemented under any of the alternatives and contribute towards the global effort to reduce human-caused climate change.

UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts are defined here as moderate to major impacts that cannot be fully mitigated or avoided.

In alternative A, there would be little potential for unavoidable adverse impacts because there would be no major new development occurring in previously undeveloped areas. Some existing conditions have resulted in unavoidable adverse impacts. The current roads and monument facilities may have been built on top of mounds. Cultural resources would continue to be protected through preservation maintenance.

Alternatives B and C would have the highest potential for some unavoidable adverse impacts on natural and cultural resources because it has the most development. However, most of the development being proposed is relatively "low key" such as trails and small facilities with only small areas of potential effect. Cultural resources would continue to be protected through active preservation maintenance.

In summary, none of the alternatives would result in any unavoidable moderate or major adverse impacts.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Implementing alternative A could result in the consumption of some nonrenewable natural resources in the form of construction materials that would constitute an irretrievable commitment of resources. This potential loss would be very small when compared with the other alternatives. This alternative includes no actions that could result in the loss of archeological resources.

Actions taken to implement alternatives B or C could result in the consumption of nonrenewable natural resources in the form of construction materials and fuels that would constitute an irreversible commitment of resources. The new facilities would result in a loss of habitat and an irretrievable commitment of resources. None of the alternatives includes actions that could result in the loss of archeological resources.

RELATIONSHIPS BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The primary purpose of Effigy Mounds National Monument is to preserve and interpret the distinct cultural resource of ancient burial mounds and associated natural resources. Under all action alternatives, the majority of the monument would be in the discovery zone that does not allow development. The National Park Service would continue to manage this zone under all alternatives to maintain natural ecological processes and native biological communities.

Under alternatives B and C, there would be a slight increase in the monument's disturbed area footprint as new trails or structures are constructed in the Heritage Addition, the North Unit, and Sny Magill. This change is so small (1 to 3 acres) that it would not result in a substantial loss of long-term productivity. Natural resource management actions would continue or be enhanced in all alternatives to increase biological diversity and, therefore, increase long-term productivity.

Consultation & Coordination, Preparers and Consultants

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View of Mississippi River from Fire Point

PUBLIC AND AGENCY INVOLVEMENT

This section addresses the public comments received on the *Revised Draft General Management Plan / Environmental Impact Statement* for Effigy Mounds National Monument. The public comment period began with the publication of a notice of availability of the draft document in the *Federal Register* on September 2, 2011. The draft document was sent to all agencies and organizations on the planning team's mailing list and was posted on the Internet (http://parkplanning.nps.gov/). The 60-day comment period ended November 4, 2011.

Comments were received (1) via direct input into the Planning, Environment, and Public Comment (PEPC) system online by the respondent, (2) via email, (3) via a letter, or (4) by recording of the four public scoping meetings held on September 20 (Prairie du Chien, Wisconsin, and Marquette, Iowa) and September 21 (Marquette, Iowa, and McGregor, Iowa), 2011. The planning team reviewed and considered all comments in preparing the *Final General Management Plan / Environmental Impact Statement*, consistent with the requirements of 40 CFR 1503. The comments allow the National Park Service and other interested parties to review and assess the opinions of other agencies, organizations, and individuals about the alternatives and their potential impacts.

This section begins with a summary of the public involvement opportunities for the plan. Next, all of the written comments on the draft plan are reproduced, and responses are provided to substantive comments. Many nonsubstantive comments are also addressed in this section if the comment addressed controversial or sensitive topic matter. Where appropriate, the text in this *Final General Management Plan / Environmental Impact Statement* has been revised to address the comments. These changes are identified in the NPS responses. No response was given to comments that simply expressed preference for an alternative or any actions within the alternatives. All page number citations in the responses refer to the draft document.

As defined in the *Handbook to Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making* (NPS 2001), comments are considered substantive when they

(a) question, with reasonable basis, the accuracy of information in the environmental impact statement
(b) question, with reasonable basis, the adequacy of environmental analysis
(c) present reasonable alternatives other than those presented in the environmental impact statement
(d) cause changes or revisions in the proposal

PUBLIC INVOLVEMENT AND RESPONSE TO COMMENTS

Public meetings and newsletters were used to keep the public informed and involved in the planning process for Effigy Mounds National Monument. A mailing list was compiled that consisted of members of governmental agencies, organizations, businesses, legislators, local governments, and interested citizens.

The notice of intent to prepare an environmental impact statement was published in the *Federal Register* on June 6, 2005. This was followed by the first newsletter that introduced the planning effort and invited the public to participate in scoping

(information gathering). Public meetings held during November 2005 in McGregor, Iowa, and Prairie du Chien, Wisconsin, were attended by 25 people. In addition, 31 written comments were received by the planning team.

A second newsletter summarizing the results of the public scoping effort was sent in early 2006.

The preliminary alternative concepts for managing the monument were delivered in a third newsletter that was distributed in November 2006. Public meetings on the preliminary alternatives were held in Prairie du Chien, Wisconsin, and McGregor, Iowa. A total of 12 people attended the two meetings and 24 written comments were received. There was some discussion on the details of the alternatives in the written and oral comments received at the meetings.

NPS representatives also met with representatives of city and county governments, and state agencies several times throughout the process.

The *Draft General Management Plan for Effigy Mounds National Monument* was made available for public review and comment in April 2009. A public meeting to receive comments on the draft plan was held at the Effigy Mounds visitor center on the evening of May 19, 2009. Eight members of the public attended that meeting and provided comments that were mostly focused on protection of resources and boundary issues.

The planning team arranged and conducted four public open houses on the *Revised Draft General Management Plan / Environmental Impact Statement* from September 20 through September 21, 2011. These meetings were held in Prairie du Chien, Wisconsin; McGregor, Iowa; and at the Effigy Mounds National Monument Visitor Center. The meetings were attended by approximately 14 members of the public.

Eleven separate written comments were received during the comment period, including letters and email comments. Additionally, one comment was provided verbally at the public meeting, which is transcribed below. They are reproduced on the following pages along with NPS responses to substantive comments. Those correspondences came from five different states (Illinois, Iowa, Kansas, Wisconsin, and Wyoming). State, federal, nongovernmental organizations or firms, and tribes that shared their comments include the U.S. Environmental Protection Agency, State Historic Preservation Office, Iowa Tribe of Kansas and Nebraska, White Pine Group of the Sierra Club, Mississippi Valley Archaeology Center, and Logan Museum of Anthropology.

TABLE 12. RESPONSE TO COMMENTS

Comment #1 —Submitted by Patt Murphy, Iowa Tribe of Kansas and Nebraska (Comments on earlier version of document made available to culturally associated tribes)	
COMMENT	**RESPONSE**
Dear Mr. Nepstad: We are prefacing our comments with a statement. We, as Indian People, would prefer the least amount of exposure for the Mounds to the general population and the least amount of disturbance as possible. As that was not presented as an alternative, these are our views. 1. As to the museum collection, our position is the artifacts from Effigy Mounds should be kept at least within the vicinity of the Mounds. With the reduction in personnel at the Visitor Center, (moving the administrative offices to houses) the break room and perhaps more of the basement could be dedicated to the collection until more permanent arrangements are made. 2. A possibility that has not been explored or at least not included in the GMP is a research center on the land the park hopes to acquire at Sny Magill for a contact base. That would be an economical as well as a cultural research and protection benefit to Effigy Mounds. In our opinion the Revised General Management Plan is extremely biased. One or two mentions that Alternative B is the NPS "preferred alternative" would be enough; to have it on nearly every page is overkill. Without this bias throughout, probably the preferred alternative for most people would be C. It has more and better exposure of the mounds and facilities. It keeps the museum collection nearby. This would attract more visitors and researchers to the Monument; both a cultural and economic benefit. In the GMP narrative it is stated the present location of the collection meets NPS minimum standards. It also lists one of the reasons for moving the collection to Lincoln is it does not meet NPS standards, it can't be both ways. In general the entire GMP does not make a fair comparison between Alternative B and Alternative C. Point for point the general public would more than likely choose C. A good share of the comparisons only point out the attributes of B and the negatives of C. Not a fair comparison.	1. The text of the GMP does not specifically direct the NPS to move the non-exhibit collections and archives to the Midwest Archeological Conservation Center in Lincoln, NE in Alt. B. The intent of Alt. B is to improve the long-term care of the collection and to more fully meet NPS museum collections standards. Alternative B was revised in response to this comment and other similar comments, to allow for the possibility of keeping the collection at the monument with investments in staffing (dedicated curatorial staff) and the facility. Because it would be difficult to ever fully meet NPS museum collections standards because of the basement location of the storage, alternative B also allows for the option of moving it off-site to a facility that fully meets NPS museum collections standards with dedicated curatorial staff. If such a facility were to become available in the surrounding area, the NPS would consider such a partnership opportunity. All options would be considered in consultation with the state historic preservation officer, Office of the State Archaeologist, and traditionally associated tribes. Space is not the issue driving the potential move of the collection. The basement of the visitor center does not meet NPS museum collections standards. Unfortunately, this cannot be solved by the addition of more space. Therefore, this action is not considered in this plan. 2. Building the research center on the proposed addition to Sny Magill was considered and was added to the actions considered but dismissed. The factors for dismissal are: the area is so low that the team did not believe that it would be feasible to site a large building without major earthwork and impacts to the floodplain; the risk of flooding; and the lack of security associated with a remote location.

3. The safety of maintenance personnel in the North Unit should be of prime importance. Facilities off EMNM premises should be explored. In previous GMP planning sessions it was stated if it is IN the GMP it still may not happen; by the same token if it is NOT in the GMP it will NOT happen. The options of Alt. C are preferred.	3. The National Park Service believes that the safety issues associated with the transport of equipment in or to the North Unit are surmountable. In the future, if the park needs to lease space (outside of Effigy Mounds National Monument) to store equipment the action would not need to be authorized in the general management plan. Therefore, this action is outside the scope of this plan.
In both viable alternatives the adverse effects are equal. 4. In Alternative C there is more and safer access to particularly the South Unit and the Heritage Addition (which, in my opinion should be renamed the Twin Bears Unit) and it keeps the museum collection close. Alt. C also creates more economic and cultural benefits. Therefore Alternative C is the preferred alternative. Only cultural resources and items related to and affecting American Indians was analyzed by us in the short time available. Again, we will reiterate, most American Indians want the least amount of public access to what we consider Traditional Cultural Property possible. Thank you for your consideration. Respectfully submitted, Patt Murphy	4. The National Park Service may consider changes to the names of the various units at any time. Such changes should take place with input from traditionally associated tribes and the public. At this point in the General Management Planning process such opportunities for input from the tribes and the public are only minimally available.
Re: Effigy Mounds Revised General Management Plan Comments Some housekeeping: 5. Page 7 Lines 47 thru 49 Need to reword- Jan. does not have 160 days 5. Page 8 Line 17 A better phraseology, instead of "ranging in distance" replace it with "of varying distances". 5. Page 14 Line 58 I have seen it referred to as "the Indian problem". I haven't seen it referred to as a "question". 5. Page 15 Line 38 The preferred word would be "spiritual'' rather than religious. Line99 Replace "more complete" with "better". We do not have a "complete" understanding but we are getting a "better" understanding all the time.	5. The suggested comments were made to the document.

5. Page 58 Line 70 Visitor Use Replace Native American with American Indian. 5. Page 122 Line 19 thru 22 The sentence "Paleo-Indians are credited with crossing the Bering Land Bridge toward the end of the last Ice Age and peopling the Americas" is an arbitrary and irrelevant statement discounted by a good share of American Indians and should he stricken. Page 123 Line 26 6. The Sauk and Mesquaki (speaking Algonquian, not Siouan language) are not Oneota. They should be stricken and the Missouria added. Page 160 Line 92 Replace word "regional" tribes with "consulting" tribes. Page 185 Line 18 Page 187 Line 99 7. To our knowledge "canoeing" was not, is not, nor has it been mentioned to be, included in monument activities. Our Comments on the Revised General Management Plan: Alt B referred to as the PREFERRED ALTERNATIVE throughout - not necessary Page iv Line 82 thru 91 8. Iowa Tribe of Kansas and Nebraska is highly critical of removing the mound associated collection away from the Monument. For researchers studying mounds in Iowa and Wisconsin it would be unreasonable to travel to Lincoln, Nebraska to access this data. If a research facility locally is out of the question, than an upgrade of curation conditions in its present location with the relocation of the break-room facilities would afford much needed room. Page v Line 14 If it is going to be *stored*, let it be stored at Effigy Mounds. Line 31-32 "*key monument resources.*" should be kept at the monument Line 75 thru 82 9. A adverse effect for Alt. C is; *visitors would be likely to encounter other visitors or park staff during their visit.* Just the opposite would be true - with more park opened up, the visitors would be less concentrated, therefore less encounters.	6. The text has been removed from the *Final General Management Plan*. 7. Canoeing the Yellow River through Effigy Mounds National Monument is an activity that is compatible with park purposes and values and is authorized by the *Superintendent's Compendium*. There is no authorized put-in or take-out location in the park boundary. 8. See response to comment number 1 above. 9. Although there is the possibility that visitors will be more dispersed under alternative C, implementing alternative C would still result in an overall impact that is beneficial and long-term because of additional visitor opportunities. No change to the document

Page 14 Line 97 thru 100 10. The tribes consider Effigy Mounds as "Traditional Cultural Property". We have been assured it has been and will be considered a TCP until the final determination of the application. We have been assured the paperwork is in the process of being prepared by Effigy Mounds staff at this time.	has been made in response to this comment. 10. The planning team confirmed that the nomination of Effigy Mounds National Monument as a Traditional Cultural Property is underway. The text included in Significance 6, Fundamental Resources and Values has been updated to include a reference to the nomination of Effigy Mounds as a Traditional Cultural Property.
Page 18 Lower box "Examples ... " second bullet, end of third line Add after " .. Preservation Officer" and associated American Indian tribes. Fourth bullet DELETE Fifth bullet 11. It is unclear what would be "appropriate" to trigger consultation on a new development or modification of existing developments nor what these developments consist of: Any undertaking that would trigger Sec. 106 would require consultation.	11. The term "appropriate" was removed from the text of the *Revised Draft General Management Plan*.
Page 32 Geology 12. We understand the railroad has broached the subject of removing some of the overhanging ledges that could possibly fall on the tracks. If that possibility exists, or is perceived to exist by the railroad, the subject should be addressed in the GMP.	12. Geology was dismissed as an impact topic because none of the actions proposed by the NPS would affect it. The railroad can only work on the hillside within their right-of-way. If the railroad would like to work outside their right-of-way on NPS lands, permission from the NPS would be required and appropriate compliance would be necessary. No change to the document has been made in response to this comment.
Page 34 Line 86 thru 1 & 2 of the following page It should be pointed out that none of the alternatives would have an adverse effect or if there is an adverse effect in an alternative, it should be enumerated.	
Page 55 Desired Resource Conditions 13. "Development Zone". It is not a matter of "if", there <u>ARE</u> cultural resources there.	13. The commenter is correct; known cultural resources in the Development Zone. The text on page 55 was updated.
Page 57 14. This is not an objective analysis in my view. In all alternatives cultural and natural resources are supposed to be managed to the highest standards. It is only attributed to alternative B, the PREFERRED ALTERNATIVE. An objective analysis of C would recognize that adding a research center nearby and keeping the collections close would be a long term beneficial aspect for Factor 3 that B does not provide. Opening more of the Monument to visitors with better access would also be a long term beneficial effect for Factor 3 in Alt C that B does not provide. As noted in the plan the short term negative aspects of either alternative would be about the same.	14. Text was added to the *Revised Draft General Management Plan* on page 57 that includes this perspective raised by the commenter.
Page 59 Line 17 thru 20 15. Explore the possibility of leasing buildings to house maintenance equipment	15. See response to comment 3 above.

used in the North Unit from landowners adjacent to the park. Employee safety should be a prime requisite. Page 85 Lines 34 thru 3& 16. " ... visitors would be likely to encounter other visitors or staff ... " Just the opposite would be true. There would be more area for visitors to explore thereby spreading visitors out and making it more secluded. The PREFERRED ALTERNATIVE is the one to crowd more visitors together because it will reduce the North Unit to some extent and a shortened trail in Sny Magill. Page 107 Alt C last paragraph See page 85 above Page 108 All of Alt B at top of page would be attainable in Alt C. As stated earlier in the plan, vegetation management as well as other aspects are to be handled on an administrative level. A virtual research center would not be necessary in Alt C - it would have the actual center.	16. See response to comment 9 above.
Page 117 OTHER: Visitor Use and Experience Alt C 17. Adding the South Unit and Sny Magill to the discovery zone would add "major, long term beneficial impact" to visitors experience. OTHER: Socioeconomic Environment Alt. C 18. Were there to be a research center added in the on site [*sic*] or in the vicinity it would create a major, long term beneficial impact on the region. Page 154 Line 60 thru 67 We have been assured Effigy Mounds has been and will be considered a "Traditional Cultural Property" as defined by ACHP and that the paperwork is in the process of being prepared by Effigy Mounds staff. Page 157 Line 68 thru 72 19. There are cultural resources near this entrance. There is the possibility this construction could result in long term, major adverse impact. Page 159 ETHNOGRAPHIC RESOURCES It should be added: will be considered a "Traditional Cultural Property" as defined by ACHP and that the paperwork is in the process of being prepared by Effigy Mounds staff. Page 163	17. Placing the Discovery Zone on portions of these units would allow for higher maintenance levels on the existing trails. Since these units are open to the public now, it is believed the resulting beneficial impact would be minor, as stated. No change to the document has been made in response to this comment. 18. As stated in the GMP, it is most likely that the NPS would lease space in an existing building for the research center. While this would be a minor to moderate beneficial impact, as envisioned it would not be major as defined in the GMP. No change to the document has been made in response to this comment. 19. The General Management Plan has been revised to no longer include the realignment of the South Unit access road entry area (in Alternatives B and C). As the commenter notes, the proposed realignment would potentially impact cultural resources.

20. Moving the collection to Lincoln, Neb. (Alternative B, the preferred alternative) would have a long term, adverse effect to tribes and researchers and to the economics of the local area around Effigy Mounds. Page 171 Line 62 The extension of the trail through this section would result in visitors staying on the prepared path thereby creating a beneficial effect for cultural resources whereas Alt. B with the shorter path would create an adverse effect. The majority of visitors will stay on designated trails and obey signage. Natural curiosity would induce visitors to wander on past the end of a short path to see what was there, thereby jeopardizing cultural resources. Page 185 Line IS Page 187 Line 99 21. To our knowledge "canoeing" was not, is not, nor had it been mentioned to be, included in monument activities. Page 192 Line 73 22. If the ninth employee is the collections curator, then the ninth employee would be in Lincoln, NE thereby depriving the Mounds area of economic benefit or Alt B requires another employee. Page 210 South Unit second line 23. Unless this is entirely on the highway right-of-way, there are cultural resources near enough that this DOES REQUIRE further consultation.	20. As mentioned in the response to comment number one above, the text of the document will be updated to allow for opportunities to move the museum collections and archives to a facility in the area that is interested in partnering with the National Park Service and that meets NPS museum collections standards or possibly keeping the collections at the monument. Given the small number of research requests that the park receives, the relocation of the collection to another site would not have a noticeable effect on the economics of the local area, but would result in greatly increased protection of the collection. The National Park Service recognizes that the relocation of museum collections may affect or diminish the cultural connection that many tribal members have with certain items, particularly if the collections are moved to distant storage facilities. As noted in the GMP, the present storage of collections in the park visitor center does not adequately meet NPS museum collections standards. Under alternative B the collections would be protected and managed in a facility that fully meets NPS museum collections standards off-site or retained at the monument with investments in staff and the facility to more closely meet NPS museum collections standards. Options for retaining the collections in reasonable proximity to their place of origin would be a consideration by the National Park Service in planning for the long-term care of the collections. All options would be considered in consultation with the state historic preservation officer, Office of the State Archaeologist, and traditionally associated tribes. 21. See response to comment 7 above. 22. This text was revised to reflect lower staffing levels in the *Revised Draft General Management Plan*. 23. See response to comment 18 above.

COMMENT #2—Submitted by William Green, Logan Museum of Anthropology

COMMENT	RESPONSE
1. A couple of notes about the Archeological Resources and Ethnographic Resources sections, pp. 122-124. It is incorrect to say that "the Oneota culture fractured into the tribes known as Sauk, Fox, Ioway, Oto, Winnebago, and other linguistically similar groups." The Sauk and Fox (Meskwaki) are not linguistically similar to the other three groups, nor are they descended from the Oneota. Also,	1. The text of the General Management Plan on page 123 has been revised. The reference to the Oneota culture fracturing has been removed.

Oneota was not a unitary culture that "fractured" into smaller groups —it was a very large and long-lived tradition or grouping of many different populations, some of whom became recognized as tribes in the post-contact era. 2. On page 124, the paragraph about NAGPRA would benefit from reference to the 2001 EFMO Cultural Affiliation study that I coauthored. I don't understand why that study, which was solicited and accepted by NPS as part of its NAGPRA efforts, is not cited in the Draft GMP. I can email a pdf of the report if access to has become difficult. If NPS NAGPRA policy or practice at EFMO departs from the conclusions or recommendations in the cultural affiliation report, or if NAGPRA rules have required new procedures, the GMP should discuss those points. Perhaps the difference between the NAGPRA term "culturally affiliated" and the term "culturally associated" (used in the Draft GMP) also should be explained. 3. Other suggestions: at the top of page 16, insert "traditions and" before "histories" -- this will help recognize both oral tradition and oral history as ways of understanding the past. On page 123, insert "by" before "Section 110." I endorse the recommendations to upgrade collections care and to maximize archaeological resource protection, balanced with appropriate interpretation and access. Thank you for the opportunity to comment.	2. The text of the General Management Plan has been updated on page 124 to include a reference to the 2001 Effigy Mounds Cultural Affiliation Study. The references on pages 250-251 have also been revised to include this study. An explanation of differences between culturally affiliated and traditionally associated tribes was added to the document. 3. The text of the GMP was also revised on pages 16 and 123 to reflect the comments.

COMMENT #3—Submitted by Charles Winterwood, White Pine Group of the Sierra Club

COMMENT	RESPONSE
The White Pine Group of the Sierra Club prefers Alternative B or C The White Pine Group of the Sierra Club has hiked the Heritage Addition to Effigy Mounds several times both before and after it became part of the monument. 1. We would like maintained trails and access for the public to the Heritage addition.	1. The General Management Plan directs the monument to undergo a public access plan / trail development plan that largely focuses on Heritage Addition. This plan would be initiated after the General Management Plan is finalized.

COMMENT #4—Submitted by Doug Herron

COMMENT	RESPONSE
1. I favor plan "A", especially since it does not include rebuilding the jeep trail access road to the south unit. Rebuilding this road would further degrade an otherwise exceptionally beautiful wood land ravine. (The 1960's rebuild was devastating enough.) This road is more than adequate to transport maintenance personell [*sic*] and equipment to the south unit.	1. If the commenter is referring to the trail connecting the Yellow River bridge to the South Unit trail system, the route of the trail will be determined in a separate planning process. Regardless of the route selected, access would be limited to foot travel. The existing access road/trail to the South Unit is a component of all of the alternatives. The road is used by maintenance personnel transporting landscaping equipment. If other options for transporting this equipment are made available outside of the park boundary, the park would be interested in closing this road to vehicular traffic.

In regard to future programs, I hope (and pray) I never again witness another chainsaw rampage such as the 1990s decimation of trees from the Marching Bear Group to the Mississippi River. I feel "less is best" and plan "A" comes closest to this ideal.	The General Management Plan is no longer recommending the realignment of the entry area (in Alternatives B and C) of the South Unit access road.
COMMENT #5—Submitted by Ronald F. Hammerschmidt, Ph.D. Environmental Protection Agency	
COMMENT	**RESPONSE**
The U.S. Environmental Protection Agency has reviewed the Draft Environmental Impact Statement for the Effigy Mounds National Monument GMP. Our review is provided pursuant to the National Environmental Policy Act 42 U.S.C. 4231, Council on Environmental Quality regulations 40 C.F.R. Parts 1500-1508, and Section 309 of the Clean Air Act. The DEIS was assigned the CEQ number 20110281. The GMP/DEIS discusses and analyzes the environmental impacts of the no-action alternative and two action alternatives. The preferred alternative, "Alternative B," delivers general information about how the park intends to operate in the future with emphasis placed on protecting its cultural resources and making those resources available to research groups and visitors with minor, short-term adverse impacts and beneficial cumulative impacts. Based on the level of impacts analyzed and conveyed in the DEIS the EPA has rated the DEIS for this project "LO" or Lack of Objections. A copy of EPA's rating descriptions is provided as an enclosure to this letter (enclosure 1). The National Park Service may wish to tier future NEPA documents from this DEIS and to enable that potential future utilization, EPA offers a few observations and recommendations as follows:	
1. North Unit: Water Treatment Facility: (on page 150, Chapter 4: Environmental Consequences under Construction Activities). There is only one mention in the DEIS of this facility with no explanation to its purpose. We recommend removing this project from the DEIS and submitting a separate EIS or EA for the public to review.	1. The reference to the North Unit water treatment facility has been removed. This action is not included in the alternatives nor is it included in the cost section therefore it should not be included in the General Management Plan.
2. Heritage Unit: 2. a. Proposed Parking Lot on CR 76: We recommend performing an EA before implementing any construction. This will ensure proper considerations are given to water quality impacts, considering its proximity to the wetlands and the Yellow River. The Yellow River is listed as an impaired stream according to the IDNR (see enclosure 2).	2. The proposed parking lot on CR 76 has been removed from the plan due to safety concerns.
3. b. Dousman Creek: Coordinate with the NRCS and state farm agencies to ensure "Prime or Unique Farmland" and "Farmland of Statewide Importance" has been	3. Dousman Creek Prime and Unique Farmlands: the GMP includes information from the NRCS on Prime and Unique farmlands and states that the three soils so designated

dealt with appropriately. Using Web Soil Survey, a tool sanctioned by the USDA, the EPA has determined a significant portion of the area was designated Unique or Prime. The data gathered and used in the DEIS is from the NASIS list of 2005 and may be outdated. However, much of this land also falls within flood plains designated by FEMA thus may need to be reevaluated by the Iowa State Soil Scientist (see enclosure 3).	are prime farmland only if drained and protected from flooding. However, these soils are located in the floodplain of the Yellow River and so are subject to regular flooding. This and the fact that the GMP does not propose any development or change to existing land use on these soils led to the dismissal of this topic from further analysis.
4. 3. Sny McGill Unit: a. Develop a separate EA for the proposed Contact Center. b. Coordinate with the Iowa State Soil Scientist at NRCS to determine whether or not the "Prime Farmland" located in the proposed Contact Center construction site is indeed "Prime." Consider publishing this exchange of information in the appendix (see enclosure 4).	4. Sny Magill (b and c): If the land is acquired and the proposed contact station is approved, then site-specific environmental analysis would be conducted and the topic of Prime or Unique Farmlands would be addressed through consultation with the Iowa State Soil Scientist and/or NRCS.
Thank you for the opportunity to provide comments regarding this project and your DEIS. If you have any questions or concerns, please contact Joe Summerlin at (913) 551-7029. Sincerely, Ronald F. Hammerschmidt, Ph.D. Director Environmental Services Division	

COMMENT #6—Submitted by John Hausman

COMMENT	RESPONSE
"What proposals or aspects do you like/dislike about the alternatives in this Revised Draft General Management Plan/Environmental Impact Statement?" The proposals of Alt-B best address the current concerns and least invasive improvements to the monument. "Do you have any suggestions for improving the preferred alternative in this RDGMP/EIS? If so, what are they?"	
1. Personally, I am most concerned with water quality in the Yellow River, Dousman Creek and wetland preservation. Much, if not most of the water issues are affected by out of the park boundaries activities. Agriculture, urban areas, and commercial developments need to be included in planning options. Perhaps some special watershed incentives could be offered to landowners in addition to what is already available.	1. As noted, water quality is affected by activities outside of Monument boundaries. This would become even more important if the Yellow River were to be designated a Wild and Scenic River as recommended in the GMP. Incentives to landowners are an effective tool to protect water quality in a watershed. The NPS would cooperate with state and county agencies to encourage the use of water protection incentives and other tools to preserve water quality and quantity in the area. No changes to the document have been made in response to this comment.

COMMENT #7—Submitted by Dennis Lenzendorf	
COMMENT	**RESPONSE**
Relationship of other Planning Efforts to the GMP page 24 1. "*The monument is located within the Silos & Smokestacks National Heritage Area. As one of the federally designated heritage areas in the nation, it is an affiliated area of the national park system-The National Park Service does not own or manage the heritage area, but may provide some funding and technical support*". The monument is one of the 390 plus sites operated by the National Park Service. I understand the idea of a partnership to promote the agricultural heritage of Iowa, but it needs to be clear that the monument is a federal park to preserve prehistoric Indian mounds; the monument is not an affiliated heritage area.	1. The discussion of the Silos and Smokestacks National Heritage Area is within the "Relationship to Other Planning Efforts to This General Management Plan." This section describes the involvement of the park with the national heritage area; the purpose of the park is discussed in the "Foundation for Planning" section of Chapter 1.
In the section of User capacity 2. *Degradation or Widening of the Designated Trail System* Some trails in the South Unit and the county road are at this time roads for access of maintenance vehicles. I don't see this as a conflict in these areas as long as vehicle travel is restricted to necessary maintenance, occasional ranger patrols and resource protection. In the North Unit most trails are narrower and occur in fragile archeological areas. Widening for maintenance vehicles should be more tightly controlled. An area of concern is the switchbacks on the Fire Point Trail that has been an area of degradation due to shortcutting in the past.	2. The GMP has been revised to include some trail and road standards in response to this and other similar comments. The trail standards specify desired widths, surface (wood chips, etc.), and character for each of the management zones. The road standards also include the desired level of use for each of the management zones.
Proposed Changes to Legislated Boundary Tract #1 I fully support inclusion of Tract # 1 to protect the integrity of the Marching Bear Group and the visitor experience in the South Unit. The fence and gate protect the bird mound within 20 feet of the fence at this time, but the experience of solitude can be affected by field work being done on the adjacent land. Future land use changes such as a private housing development would greatly diminish the experience of visiting the site. Noise of vehicles, lawn mowers, loud music and dogs barking could be what visitors take away from the site in the future. The parcel would help to preserve the "sacred geography" around the Marching Bear Group. The 20 acre parcel could become an interpretation area to give visitors an appreciation of early historic vegetation and the story of the Military Road in early Iowa. It is imperative that this parcel be included in future monument boundary changes.	

Tract #2 This land is essential to maintain the monument land south of the Yellow River. The county road currently crosses private lands which makes resource protection of an isolated bird mound difficult. In the past vehicles involved in logging operations have damaged mounds in the area above the county road and jeopardized preservation of the isolated bird mound along the county road. Erosion of soil into Founder's Pond has also resulted in degradation of this critical body of water that is used by many migratory birds including osprey, bald eagles and many species of waterfowl. Red shouldered [*sic*] hawks have been documented to nest in this remote tract of land south of the Yellow River, as well as Kentucky warblers and Acadian flycatchers. The westernmost parcel of Tract #2 is especially critical to preservation of the view shed from several overlooks in the monument. The area may be susceptible to future development of housing overlooking some of the most important areas of solitude in the monument. Little can be done to remove traffic sounds along the highway corridor that bisects the North and South Units of the monument but there is an opportunity to maintain solitude in areas to the south and west. Tract # 3 This tract is important to complete the county road access without crossing private land. Current land use practices include logging and in some areas grazing. Both of these practices have a detrimental effect on the quality of Dousman Creek. Dousman Creek currently is being degraded by these practices and represent a valuable aquatic resource that should be better protected. The land along the stream includes habitat for several rare plants, amphibians and reptiles. Dousman Creek could be a benchmark to use to identify aquatic insects in trout streams for habitat improvement across northeast Iowa, southeast Minnesota and southwest Wisconsin. The County Road When the monument was established, it was felt that the issue of this road that runs through the South Unit would be dealt with at a later date as it was not critical to the establishment of the monument in 1949. Over 50 years later, county road remains an issue in the monument. 3. It is time to preserve the land adjacent to the road and turn control of the road over to the park service. The county road would provide for an enhancement of the overall protection of cultural and natural resources and interpretation of the monument. It would provide an outstanding opportunity for visitor enjoyment of the solitude, wildlife and beauty along the Yellow River. Tract #4 Sny Magill 4. Sny Magill contains half of the mounds preserved in the monument. It contains	3. The National Park Service is not able to make these changes without the cooperation of County officials. The National Park Service will continue to work closely with the County on all matters related to this road. 4. Sny Magill: If the land is acquired and the proposed contact station is approved, then

one of the greatest concentrations of prehistoric mounds known. The location presents special issues for access by the public. The work of clearing trees and vegetation and the current trail is a tremendous improvement to preserve the mound group as well as provide access. I believe acquiring the Tract #4 Sny Magill Tract can be a step in the right direction to provide better access and parking. The tract however is mostly in the flood plain and I question filling in the land for parking or visitor contact station. Possibly along highway 76 where the land is higher would be more suitable for parking and a contact station. What is currently lacking at the Sny Magill site is the presence of National Park Service personnel. How to accomplish this goal is going to be difficult. A contact station could have vault toilets which would be less expensive to maintain. During the summer and fall, it is important that the park service have a presence at the location. If a parking area could be provided on a corner of Tract # 4 patrols and informal as well as occasional formal presentations need to be scheduled. Lack of staffing could result in increased vandalism and incompatible activity. Stabilization of banks along Johnson Slough should occur with the best available technology that does not distract from the natural landscape.	site-specific environmental analysis and site planning would be conducted to determine the best location for a contact station and small parking area.
Boundary Adjustments considered but not included in Recommendations	
5. The Riverfront Tract is currently under the control of the State of Iowa (not including the railroad right of way). There are at least two and possibly three archeological sites that should be managed by the National Park Service. It is within the legislated boundaries of the monument and should be preserved in the monument.	5. If the Riverfront Tract were to become available the National Park Service would be interested in acquiring the land at which point the National Park Service would assume management responsibility of the archeological sites.
6. Several other tracts were not included in the general management plan out of respect for concerns expressed by the landowners. I understand that current landowners have concerns about mentioning their property in a general management plan. However land ownership changes occur over time. No land will be acquired unless from willing sellers. I am concerned that the park service's future goals are being compromised by not addressing long range boundary adjustments.	6. Some tracts were dropped from further consideration for the reasons stated and the fact that they do not contain resources that are fundamental to the monument's purpose (e.g. views). These parcels could be re-considered during a future Boundary Study or Land Protection Plan.
Heritage Addition I support the county turning over the county road to the National Park Service. 7. In terms of parking, I believe a parking area along highway 76 should have room for 6-8 vehicles and a walking trail to the north side of the Heritage Addition. 8. Trails could be developed along an existing corridor at the north side of the floodplain that runs along the base of the ridge. Another trail could use an existing logging road to the bear mounds. The ridge beyond the mounds is very fragile and studies would need to be conducted to determine if access would have adverse	7. The parking area located along highway 76 (proposed in the Revised Draft GMP) has been removed from the Final GMP due to safety concerns. After the completion of the GMP, the monument will undergo a public access plan / trail development plan that largely focuses on the Heritage Addition. In this document, the monument would look at trail connections from the visitor center parking lot to trails in the Heritage Addition. 8. The General Management Plan directs the Park to undergo a public access plan / trail

effects on the vegetation. 9. A major project needs to be implemented to restore the vegetation along the Yellow River north bank. The floodplain presently consists of monoculture stands of reed canary grass, an invasive species which is leading to a decrease in diversity of plants and wildlife.	development plan that largely focuses on the Heritage Addition. This plan would be initiated after the General Management Plan is finalized. 9. Specific projects such as this are outside the scope of a general management plan. This type of action would be proposed as part of a future vegetation management plan. No change to the document was made in response to this comment.
South Unit 10. The access road going into South Unit needs to be improved to provide for safety along highway 76. The entry is presently too steep in the initial 50 yards. A possible mound along the access road needs to be preserved. Complete the New Trail connecting the South Unit mounds with the county road within compliance of all regulations. Minimal signage is needed to maintain the experience of exploring the mounds without distracting from the natural setting. Research on best practices for long term mound preservation should continue. Open areas that contain prairie and Rattlesnake Knob should continue to be managed with periodic burns. Visitors need to be educated about staying on the designated trails or open areas around the mounds. North Unit The overlook at Fire point reconstruction will need to be conducted to better preserve the mounds at Fire point while also providing access to the views of the river and the South Unit. Two areas that the North Unit Trail that should be investigated for possible relocation include the section adjacent to private property just north of the Third Scenic View and along the north boundary where the trail runs adjacent to private property.	10. Due to resource concerns, the realignment of the access road to the South Unit is no longer proposed in any of the alternatives. The National Park Service is interested in alternatives to provide for maintenance access that might occur off of National Park Service lands. If access can be provided elsewhere, the Park is interested in re-vegetating much of the road to provide for trail access only. If this were to take place appropriate compliance would be conducted.
The Monument's Museum Collection and Archives 11. The museum collection and archives has been a major concern for many years. The general management plan preferred alternative is to move the collection to a site in a nearby town. I would prefer that the present visitor center be expanded to include additional space in the rear of the present building. This addition and restructuring of present space could provide additional space for interpretive displays on the visitor level and the lower level would house an expanded area for the museum collection, the archives and space for researchers and an office for a cultural resource specialist. Moving the collection offsite is an alternative if more secure space cannot be provided at the monument. This I believe should not be the preferred alternative.	11. Space is not the issue driving the potential move of the collection. Therefore an addition to the existing visitor center is not considered in the GMP. The basement of the visitor center does not meet NPS museum collections standards. The intent of moving the collection is to provide better protection and security. However, alternative B was revised in response to this comment and several similar comments to consider the option of keeping the collections at the monument with investments in staffing and the facility, among other relocation options.

Dedicating a staff member to this offsite collection and archive site would be acceptable if funding for personnel was not an issue. Having a staff member stationed at the offsite location would be an inefficient use of needed personnel onsite. 12. If no other alternative is acceptable, moving the collection to a nearby location in Marquette, McGregor or Prairie du Chien would be preferable to moving the collection to the Midwest Archeological Center. I think a location for the collections on site that provides security and accessibility to researchers is critical.	12. The text in Alternative B of the *Final General Management Plan* has been revised to reflect the interest of the National Park Service in cooperating with a local university, museum, nonprofit organization, or government agency to store the museum collections and archives closer to Effigy Mounds National Park. The new facility would need to meet NPS museum collections standards.
Virtual Research Center Mounds Maintenance	
13. If it has not been developed, a mounds maintenance plan needs to be developed with each mound having its own management plan. This plan would include the data recording the condition of each mound; the abiotic and biotic factors affecting the long term management; the type of vegetation on the mound and how this vegetation will be managed would be documented for each mound. The database will include all historic data on the mound (various studies have been done but these studies and databases need to be organized into one database of information). This information would be readily available to researchers, resource managers, interpretive rangers and maintenance staff that work directly with vegetation management and mound preservation. This database would track vegetation patterns in areas adjacent to mounds as well provide long term monitoring and management. Research on mounds throughout the country and a clearinghouse of data on mounds of the Midwest would be included in the virtual research center. The center, located at the monument, would interface with archeological research facilities, federal, tribal, state, county and local government agencies, and land managers. Information on legal requirements and management options of preservation of mounds and archeological sites on private property would be available to landowners. This would be critical to preserve the many sites located on private lands. I believe this outreach function would be valuable in educating the public and provide stewardship of our diminishing archeological heritage.	13. With over 200 mounds in the monument, this may not be feasible. However, this type of action could be proposed as part a long-term mound maintenance plan.
Yellow River Wild and Scenic River Assessment	
14. I have a concern about the designation although I realize at this point the process is being studied. If the purpose of this designation is promoting the Yellow River as a nationally recognized recreational river, I believe there are several areas that need to be considered. The river flows through 3.5 miles of the monument, however upriver another 3.8 flows through state owned land. Is this state owned section or other sections upstream being considered? The social takeout along 76 would be closed mostly due to a very narrow strip of private land between the	14. The purpose of National Wild and Scenic River designation is to preserve a river's free-flowing character and its outstandingly remarkable values, which for the Yellow River are scenery, geology, wildlife, history, and recreation. The suitability study analyzed the segment that is within NPS jurisdiction. Segments upstream of the monument are also listed in the *Nationwide Rivers Inventory* and could be studied by the state. If this study occurs, the NPS could cooperate and offer technical assistance. It is true that a new bridge across the river would probably not be allowed because it

Heritage Addition and the highway right of way. Has there been any discussion of acquiring this property and upgrading the landing. Also the area below the highway 76 bridge would be closed due to safety considerations. Access out of the river would require going out into the Mississippi River and taking out on the landing of the State of Iowa. The other concern is this would restrict any bridge from crossing the river at the west end of the heritage Addition, near the Jefferson Davis Sawmill site. I think this river crossing would be important to connect the North Heritage Addition with the county road on the south side of the Yellow River. Would the benefit of designation outweigh the restrictions that would be placed on the river access and crossings? Also with anticipated increased river use, whether or not restriction on takeouts would be enacted, more activity will occur. How will this increased river activity fit in with the goal of providing outstanding hiking along either side of the Yellow River? Would the increased river activity jeopardize the visitor experience along the trails adjacent to the river? Some increased activity would be acceptable but the sounds of groups passing through this section on a regular basis will distract from others experience. With exceptions and comments, I support the alternative B as outlined in the draft GMP. Thank you for the opportunity to comment on the Effigy Mounds National Monument Draft General Management Plan.	would adversely affect the scenic values. The GMP is not proposing any closures of the river below the highway 76 bridge. The NPS does not anticipate a large increase in the number of boaters on the river because of designation. The proposed no-wake zone would enhance the experience of riverside hikers by reducing the amount of noise from motorboats on the river.
COMMENT #8—Submitted by Timothy Mason	
COMMENT	**RESPONSE**
Dear Superintendent James A. Nepstad, Thank you for inviting me to comment on this GMP proposal. Similar to your document I would like to put forth an introduction. My introduction, for the record. I was born and raised just a couple miles south of the original South Unit boundary of your park in the little river village of Marquette. Our parents instilled upon us a very strong environmental ethic. They were outdoor folks, hunting & fishing. But much more then that they actively taught us the web of life in all we did. Not simply to take but to help nourish the natural world we live in. We were raised with boats of every description to ply the Mississippi River. Handmade houseboat, flat-bottoms, duck boats, etc. We were "riverat" kids, and we roamed the nearby wooded hills, creeks & swamps at will.	

My very first memory of Effigy Mounds National Monument was when I was probably six years old my brother & I were taken on a hike with our Aunt Marcella McGowan. Aunt Marc was a school teacher and a nature lover who would point out & identify all the woodland flowers and plants along the Fire Point Trail. Later at age 16 my same brother & I would get summer jobs at the park with the Neighborhood Youth Corps (NYC) working with the maintenance department on the trail system. In 1979 I would be employed as a seasonal laborer & continue seasonal employment for a total of 19 years. I held a variety of positions including Park Ranger, wildland firefighter and radon mitigation advisor. I love Effigy Mounds National Monument! It is a part of who I'm and my years spent there have contributed to the way I see life in general. I'm a preservationist, tree-hugger and very proud of it. With that said, now begins my formal comments on your GMP. 1. Over the last several years as I would drive by the park, visit and walk the trails it sickened me to see all the development, i.e. plastic flooring boardwalks, bridge across the Yellow River & all the green lumber products, the cutting of maintenance roads, the Quonset hut type structure built in the prairie area of the north unit. And the huge stock pile of building materials vehicles and tools overflowing from the maintenance building. I simply thought that the National Park Service had lost its way, as many local folks had also thought. However when the news broke that all this junk and the damage to the resources were the result of a couple federal employees conspiring to circumvent federal and state law to build their own little empire with taxpayers dollars I was outraged! "MY PARK" was violated by these people? What would Ellison Orr and his cadre of old timers, The Mississippi River Valley National Park Association, all the former Effigy Mounds employees and all the school children that had listened over the years to the park's mission statement think? These actions were worse and longer lasting then public urination in a cathedral! I will not rest until these employees are held accountable by the U.S. Government's judicial system and a jury of their peers. With that said I don't believe the NPS "gets it". The document that I received is 252	1. Between 2000 and 2010, some developments were constructed without proper National Environmental Policy Act and section 106 compliance. The National Park Service has consulted and would continue to consult with the state historic preservation officer and traditionally associated tribes in order to meet our legal obligations to the greatest degree possible. When the Midwest Regional Office of the National Park Service became aware of actions completed without proper compliance, all construction was halted. Several of the developments were subsequently removed including the boardwalk loop segment in the South Unit and the Quonset hut type structure. The National Park Service has evaluated the past construction projects and trends at the park and attempts to chart a new course with much less development recommended in the revised General Management Plan. Additional proposed construction actions have been removed from the Revised Draft General Management Plan including a small proposed parking area in the Heritage Addition and the realignment of the South Unit access road. The GMP has also been revised to include some trail and road standards in response to this and other similar comments. The trail standards specify desired widths, surface (wood chips, etc.), and character for each of the management zones. The road standards also include the desired level of use for each of the management zones.

pages and weighs approximately 2.5 lbs... Was this really necessary? I believe it demonstrates a federal bureaucracy out of control. The mission of Effigy Mounds National Monument "IS TO PROTECT SIGNIFICANT PREHISTORIC EARTH MOUNDS FOUND IN NORTHEAST IOWA …….. WILDLIFE, SCENIC AND OTHER NATURAL VALUES OF THE AREA". That is a pretty simple statement. It is preservation as the core element. Status coup, not a bunch of wasteful development. Here is what I humbly propose. Dismantle and remove all the boardwalks, the Yellow River Bridge and all the "green lumber". To repeat, the park needs to preserve the landscape of the prehistoric Indians who constructed the mounds. What I see is a pile of obtrusive building materials. That wetland area reminds me of a cattle shoot at a livestock yard not a natural ecosystem. I might suggest you read a short article I had published in the Iowa Ornithologist's Union periodical, Iowa Bird Life, Vol. L No. 3, September, 1980. It has to do with my monitoring of a then State Endangered Species, the Red-Shouldered Hawk nest located near the Yellow River highway bridge construction site that year. I cannot believe any hawk would now nest above that "cattle shoot".	
2. The absolutely worst abomination of the natural world near the Visitor's Center is that manufactured wooden deck from the walking bridge to the impacted Three Mounds Area. When I was leading Ranger guided interpretative walks you would lead your group across the bridge and into the woods and stop at the Three Mounds. Then you would let these folks momentarily settle into the woodland scene. Songbirds singing, a breeze rustling through the tree canopy. You were now in an almost prehistoric setting and could begin your talk. Now all I see is a very shoddy built suburban home deck. I cannot believe that pile of ##@@# is still let to stand there. I would be ashamed & embarrassed quite frankly to be associated with that.	2. The National Park Service can consider removal of this and other minor developments outside the framework of the General Management Plan.
3. Your lengthy document speaks of pedestrian access to the South Unit. Just a couple simple suggestions if you feel you have to make improvements to what has worked just fine for 60 years. Take that Yellow River Bridge which was illegally built and incorporate it into a bridge over Highway #76 similar to what you see in urban areas over Interstate highways. It could be engineered and done. 4. Your document also speaks of moving the collections to a remote location. I also have a somewhat simple resolution to that. The current maintenance building could be retrofitted into a collection storage & study site. There never was any need or justification for a building like that in such a small park. Relocate that department back into the "old maintenance building". Move the Resource Manager's operation to the basement of the Visitor Center were the collections are now located. Sell off allot of the	3. The National Park Service did not remove the Yellow River Bridge and the boardwalk connecting the bridge to the visitor center and does not propose to remove these in the GMP, partly due to the expense of removal (thereby making a poorly considered and expensive action even more wasteful) and partly because they facilitate the connection of the visitor center to the South Unit trail system far more inexpensively than other alternatives at this point. 4. Space is not the issue driving the potential move of the collection. The basement of the visitor center only minimally meets NPS museum collections standards. The cost of retrofitting an existing building (designed for a very different use) in the

machinery and tools that caused the illegal impacts to begin with. Build a privacy wall/ fence around the maintenance compound. That area on the NW corner of the terrace looks more like a sloppy construction company's yard then the entrance to a National Park Service area. 5. I might add in all of your Draft GMP, unless I missed it, I don't see a discussion on costs of your alternative plans. Our culture, our nation, our government is transcending into a different era. Taxpayers in general are no longer tolerating wasteful spending, we our broke and it's not gonna change. I say clean up the park and protect and preserve it. In closing Sir, I and others vow to volunteer to physically remove and clean up the site of Effigy Mounds National Monument; all you have to do is ask. A hardcopy of this letter is in the U.S. Mail to your office. Sincerely, Timothy Mason	park to meet NPS museum collections standards would be cost prohibitive compared to the cost of leasing conforming space in a nearby community. 5. An analysis of costs is included in Chapter 2.
COMMENT #9—Submitted by Bill Howe (comment transcribed by NPS staff at public meeting)	
COMMENT	**RESPONSE**
p. 25 -USFWS mentality of non-cooperating should <u>not</u> exist, should work together. p. 26 -Last bullet parking is a real issue/hazard b/c of highway no matter what you. p. 27 -Do not need Wild and Scenic layer of bureaucracy. p. 31 -Last paragraph discharge from Sny Magill –The park does not need to consider discharge impacts because there is nothing the park can do to prevent it. 1. p. 32 -It would be nice to use the historic names of places in the park. -Commenter is not worried about commercial forestry. 2. p. 50 -The view of the quarry may become an issue in the future be aware of future quarry development on the hillside to the south of Sny Magill. p. 76 -High water at Sny Magill can have an impact. 3. p. 85 -Consider the development of the new research center located adjacent to park in the building owned by the U.S. Fish and Wildlife Service. p. 87 -10 miles may as well be 100- should be closer. p. 95 -The NPS should coordinate with the U.S. Fish and Wildlife Service and/or the U.S. Army Corps of Engineers to reduce costs. p. 100 -USFWS center no longer viable, could have been a good opportunity to share a facility.	1. The National Park Service may consider using historic place names to identify areas of the park in the future. Consideration of historic place names could be addressed in the long-range interpretive plan. 2. Views from the mounds would be unaffected by the quarry operations. If the tract proposed for acquisition is meant to support visitation to the mounds, rather than to serve as a scenic viewpoint. 3. The National Park Service would consider this and other partnership opportunities in the area.

p. 105 -Use trees and natural materials to route visitors rather than fences. 4. p. 110-Canoe take out: commercial interests should work to utilize it, consider low profile dockage (floats). p. 111 -good idea for archives etc to be in new facility- can't change some viewsheds and soundscapes 5. -document doesn't mention St. Paul district of U.S. Army Corps of Engineers, only the Rock Island District. USFWS also should mention Twin Cities District. 6. P. 153 -Cumulative effects- doesn't mention time frame. p. 155 -Use riprap @Sny Magill -Water treatment facility- new techniques chemicals and sunlight p. 157 -Don't remove all roads- "You'll need them someday" can't get rid of footprint 7. p. 158-Why do national register determination <u>after</u> purchase p. 167 -Do not need Wild and Scenic River designation, don't need another agency to do what we're already doing p. 174-Not enough room to talk about invasive species 8. p. 175-Special status species section not complete 9. p. 192-The cumulative effects of tourism should include visitors to Guttenberg and Lansing about 26000 to 27000 visitors per year. 10. p. 207-threathened and Endangered Species should be updated with complete list.	4. Currently the Superintendent's Compendium prohibits canoe take outs or landings in the Monument. 5. There is no reference to USACE Districts in the document. However, since the NPS is not proposing construction in a waterway, no formal consultation with the Corps is necessary. 6. Cumulative effects take into account all past, present, and foreseeable future actions. This typically means since the park unit was established to the foreseeable futures, which is typically 15-20 years out. 7. The National Park Service does not generally prepare national register nominations for lands that they do not own. 8. The species listed in this section were rechecked and appropriate updates were made. This list only includes special status species that are known to occur in Effigy Mounds National Monument. 9. There is not enough information to say how this is related to monument visitation or if there are any trends that should be noted. 10. The planning team received a list of threatened, endangered, and candidate species from the U.S. Fish and Wildlife Service. Monument staff compared the list to species known to occur in the monument and this was used in the EIS, this list was rechecked on March 19, 2012.
COMMENT #10—Submitted by Phyllis Lentz	
COMMENT	**RESPONSE**
You have done a terrific job of explaining all about Effigy Mounds. Sincerely, Phyllis Lentz	
COMMENT #11—Submitted by Douglas W. Jones, Review and Compliance Program Manager and Archaeologist, State Historic Preservation Office, State Historical Society of Iowa	
COMMENT	**RESPONSE**
Dear Ms. Randall, Thank you for providing our office with the above referenced document. We sincerely appreciate the opportunity to provide comments on this document. We	

understand that future projects to be conducted at Effigy Mounds National Historic Monument under this plan will be federal undertakings for your agency and will need to comply with Section 106 and 110 of the National Historic Preservation Act and with the National Environmental Protection Act. We have reviewed this document. Provided below are our general comments. 1. We are aware that this draft has been in development for quite some time and that at its point of publication and distribution would not contain descriptions of situations and anticipated corrective actions that have been in discussion within the last 6 to 9 months.	
1. 2. We did note that this document does not discuss recently disclosed projects and activities that did not follow proper protocol and procedures for implementation in compliance with applicable federal regulations and laws.(see in particular pages 100-103) 1. 3. We note that the document does not include any statements about corrective measures that are under consideration and discussion in regard to recently disclosed projects and activities that did not follow proper protocol and procedures for implementation in compliance with applicable federal regulations and laws. (see in particular pages 100 - 103)	1. Between 2000 and 2010, some developments were constructed without proper National Environmental Policy Act and section 106 compliance. The National Park Service has consulted and would continue to consult with the state historic preservation officer and tribes in order to meet our legal obligations to the greatest degree possible. Several of the developments were subsequently removed including the boardwalk loop segment in the South Unit and the Quonset hut type structure. Other developments would require additional consultation with the state historic preservation office and tribes as well.
2. 4. We note that a number of trail locations on the maps are not updated and that a number of trail segments associated with the recently disclosed activities have been removed and no longer exist (see in particular Figure 13 which includes segments of trails which have been removed after recently concluded consultation). We think that the maps included in the final document should be updated to reflect the current trails at the facility.	2. The maps in the *Final General Management Plan* have been updated to reflect existing trails.
3. 5. We note that this document does not discuss any of the wetland issues and impacts to the waters of the United States that the recently disclosed activities may have had. We recommend that these should be addressed as well as the process on how future impacts will be considered and evaluated under the National Park Service protocols and procedures in consultation with the other appropriate agencies such as the United States Army Corps of Engineers and the Iowa Department of Natural Resources.	3. As stated in the general management plan: "The only actions proposed in the alternatives that could affect wetlands or floodplains are the construction of trails through the Heritage Addition and in the Sny Magill Unit in alternatives B and C. Until public access/ development plans for these areas are prepared, it is difficult to assess the impacts (if any) that might occur. Full site-specific environmental impact analyses on wetlands and floodplains would be conducted with the development of these plans, so wetlands and floodplains are dismissed from further analysis in this general management plan and deferred to the implementation plans."
4. 6.Per recent consultation with the tribes on this proposed draft, we have noted that the tribal representatives have concerns about the concept of a proposed "Research Center."	4. This is not the understanding of the National Park Service based on comments submitted and from consultation with traditionally associated tribes.
5. 7. Page 43, Overflow Parking. In our opinion, no overflow event vehicle parking	5. The general management plan has been revised so that overflow parking on grassy

should ever be allowed on identified sensitive areas. Per recent consultations, we understand that the National Park Service also agrees with this although this document does not capture this fact. It also does not address the change of interpretation regarding areas around the visitor center once thought to no longer contain significant cultural resources. Based on recent research, these areas still appear to contain significant cultural resources and should be considered to be sensitive areas. Once again, thank you for the opportunity to provide comments on this document. We look forward to further consulting with your agency on the development of this document and in consulting with your agency on the future projects and activities at Effigy Mounds National Historic Monument. Please reference the Review and Compliance Number provided above in all future submitted correspondence to our office for this project. Should you have any questions please contact me at (515) 281-4358. Sincerely, Douglas W. Jones, Review and Compliance Program Manager and Archaeologist, State Historic Preservation Office State Historical Society of Iowa	areas would no longer be tolerated. This change is reflected in the user capacity section of chapter 2.

COMMENT #12—Submitted by Katherine Stevenson, Projects Director, Mississippi Valley Archaeology Center

COMMENT	RESPONSE
Jim, Here are some comments on the draft management plan. After receiving your last e-mail I put November 18 on my calendar as the deadline, and now I just saw that you requested them "before" that date, so I apologize for them coming in today instead and hope they are still viable. With busy fall schedules, it's the best we could do. Joe Tiffany read through the draft and gave me some comments, and I've done my best to meld them together with mine.	
1. **Cover**: Joe suggests a different illustration because the current one doesn't seem to be a realistic depiction of an activity that would occur in that way, or in that location (which appears to be next to a large Middle Woodland mound). Are the people burying someone next to a mound? Or is this the start of building an adjacent mound? Why are there so few people? Etc.	1. The cover and divider pages have been redesigned using images of Effigy Mounds National Monument.
2. **Terminology:** Joe and I are both concerned about the use of the term "moundbuilders" or "the moundbuilders" as though it represents a culture or a	2. A footnote explaining the term "moundbuilder" has been added to the Final General Management Plan on where the first mention of "moundbuilder" occurs in

people, since the practice of building earthen mounds as a form of cultural expression spans a wide range of cultures and time periods. Page 162, for example, refers to "the mound-builder culture," but there isn't any such entity. Page 47 refers to a "moundbuilder village habitation," which again doesn't quite work as a descriptive term. Also, there are the leftover connotations from the earlier use of "moundbuilder" to mean a long-dead race separate from current Native peoples. Other educational information in the interpretive center etc. does a good job of explaining how mound construction fit into the sequence of evolving cultural patterns in the region, but using the "moundbuilder" term loses much of that nuance and meaning. This could be fixed with some minor phrasing changes. For example, could the regional cultures that built mounds be mentioned briefly by name early on? (Currently that doesn't happen until page 122.) That would provide context for referring to the cultures associated with the mounds by names other than "the moundbuilders." **Survey:** We both agree completely with plans to complete the archaeological survey of the entire property, and LiDAR would be an especially helpful vehicle for mapping mounds and many other management tasks and potential enhancements (e.g., evaluating viewsheds).	the text.
3. **Ecosystem restoration:** Joe points out that we can't really "restore" ecosystems to what they once were, and there really aren't plans to recreate the original prairie or savanna/parkland vegetation there, in what is now a fairly heavily wooded area. Modest measures such as selective tree removal are the most appropriate, but they won't restore the original ecosystem. Education about precontact ecosystems and how they were maintained is valuable, however, and practical. **Quiet/low impact visitation:** This is an excellent approach to keep up, and Alternative B (rather than C) seems to fit this model well. (People could be directed to nearby Wyalusing or other parks with camping facilities.) Alternative C seems as though it would change the character of the place quite a bit.	3. The intent is to restore/maintain a prairie ecosystem where feasible, especially around the major mound groups. This could involve selective woody species removal, removal and prevention of exotic species and noxious weeds, and replanting with native seed. No change is necessary.
4. **FTD village site:** Joe suggests incorporating the FTD village site into the interpretive model, since right now no appropriate village/habitation site is linked to the mounds, meaning that the whole story isn't being told. 4. **Linking to other regional sites:** Joe suggests linking EMNM to other important mound groups and village sites in the region such as Fish Farm Mounds State Preserve, Wyalusing State Park, and Yellow River State Forest to increase the visitor experience and fully integrate EMNM into the tourist potential of the region. **Signage:** Signage on the mounds/mound area should be kept to a minimum as it	4. After the completion of the general management plan, Effigy Mounds National Monument will begin a long-range interpretive plan. The long-range interpretive plan would be a good opportunity to consider expanding the interpretation to include the village site and other regional mound sites.

currently is, since interpretive material can be provided in other ways that are easier to maintain and less intrusive on the landscape. 5. **Visitors center and collections:** Joe wonders whether there is potential for enlarging the existing visitor's center to cover projected use. 6.The whole issue of taking the collections offsite is problematic (many logistical and management headaches), and a "virtual" research center as proposed in Alternative B would presumably mean an extensive commitment to digitization and web access that could be expensive and difficult in different ways from those associated with a place people can visit. Also, as the collections are not completely catalogued, continuing with that process should be part of the plan. This collections-related portion of the plan, for either Alternatives B or C, could use some fleshing out, as the implications are significant. 7. **Visitor use/numbers and parking:** There's information on numbers of visitors in recent years, but we didn't see anything on projected numbers for the future, with the proposed alternatives. For example, would the proposed enhancements increase the number of visitors, and if so, would that increase impacts and logistical problems? Parking at the visitors center is already mentioned as a problem, and increased enforcement for violations or increased education on busy times might discourage visitors without really solving the problem of too little parking space for the people who want to visit (and who should be encouraged to do so). **Page numbers:** As a minor point, I would encourage you to put page numbers on the figure pages if you're going to refer to them by page number in the text (e.g., on page 47). We also want you to know that we very much appreciate all the effort that is going into this planning process as well as the current management of the facility. Regards, Kathy	5. Space is not the issue driving the potential move of the collection. The basement of the visitor center does not meet NPS collections standards. This cannot be solved by the addition of more space. Therefore, enlarging the visitor center was not considered in this plan. An addition to the existing visitor center to accommodate additional uses is not considered in the general management plan because it would have too great an environmental impact. A recent study revealed (through ground penetrating LIDAR imagery) many mounds in and around the visitor center area that were not previously known. 6. The digitization of the collections would be handled by the new cultural resource and museum technology staff proposed in the alternative and/or by existing NPS staff at the Midwest Archeological Center; as a result the additional costs would be modest. The costs associated with the virtual research center (included in alternative B) would include Web access. Both alternatives B and C call for additional cultural resource staff that would be responsible for cataloging the remainder of the collection. Additionally, given the concerns raised in this comment and many similar comments the National Park Service has changed alternative B to allow for possibility keeping the nonexhibit collections and archives at the monument with an investment in staffing and the facility. 7. The additional visitor opportunities in the preferred alternative could possibly result in an increase in total number of annual visitors. However, this is very difficult to quantify because of unknowns such as the economic situation, the price of gasoline, and future funding for the National Park Service that would also affect the number of visitors.

CONSULTATION WITH OTHER AGENCIES/OFFICIALS AND ORGANIZATIONS (TO DATE)

U.S. Fish and Wildlife Service, Section 7 Consultation

During preparation of this document, NPS staff coordinated informally with the USFWS field office for this area in Rock Island, Illinois. The list of threatened and endangered species (appendix E) was compiled using information received from the U.S. Fish and Wildlife Service and rechecked March 19, 2012.

In accordance with section 7 of the Endangered Species Act and relevant regulations at 50 CFR Part 402, the National Park Service determined that implementing the preferred alternative in this general management plan is not likely to result in adverse effects to listed species and so would not require formal consultation. A copy of this management plan was sent to the USFWS field office and the Iowa Department of Natural Resources.

The National Park Service has committed to consult on future actions conducted under the framework described in this general management plan to ensure that such actions are not likely to adversely affect threatened or endangered species.

Iowa State Historic Preservation Officer, Section 106 Consultation

Agencies that have direct or indirect jurisdiction over historic properties are required by section 106 of the National Historic Preservation Act to take into account the effect of any undertaking on properties eligible for listing in the National Register of Historic Places. To meet the requirements of 36 CFR 800, the National Park Service sent letters to the Iowa state historic preservation officer, and the Advisory Council on Historic Preservation in January 2005, inviting their participation in the planning process (appendix C).

A copy of the revised draft general management plan was sent to the Iowa state historic preservation officer. Comments from the Iowa state historic preservation officer were received and addressed. A copy of this internal draft of the *Final General Management Plan/Environmental Impact Statement* was sent to the Office of the State Archaeologist and the Iowa state historic preservation officer.

American Indian Tribes

The National Park Service recognizes that indigenous peoples may have traditional interests and rights in lands now under NPS management. Related American Indian concerns are sought through consultations. The need for government-to-government American Indian consultations stems from the historic power of Congress to make treaties with American Indian tribes as sovereign nations. Consultations with American Indians are required by various federal laws, executive orders, regulations, and policies. They are needed, for example, to comply with section 106 of the National Historic Preservation Act. Implementing regulations of the Council on Environmental Quality for National Environmental Policy Act also call for American Indian consultations.

Letters were sent to the following American Indian groups to invite their participation in several steps of the planning process (see appendix C for a sample of the letter that was sent to all tribes):

- Flandreau Santee Sioux Tribe of South Dakota
- Ho-Chunk Nation of Wisconsin (formerly the Wisconsin Winnebago Tribe)

- Iowa Tribe of Kansas and Nebraska;
- Iowa Tribe of Oklahoma
- Otoe-Missouria Tribe of Indians, Oklahoma
- Lower Sioux Indian Community in the State of Minnesota
- Prairie Island Indian Community in the State of Minnesota
- Sac & Fox Tribe of the Mississippi in Iowa
- Sac & Fox Nation of Missouri in Kansas and Nebraska
- Sac & Fox Nation, Oklahoma
- Santee Sioux Nation, Nebraska (formerly the Santee Sioux Tribe of the Santee Reservation of Nebraska)
- Shakopee Mdewakanton Sioux Community of Minnesota
- Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota (formerly the Sisseton-Wahpeton Sioux Tribe of the Lake Traverse Reservation
- Spirit Lake Tribe, North Dakota
- Upper Sioux Community, Minnesota
- Winnebago Tribe of Nebraska

The tribes were briefed on the scope of the planning project and the preliminary alternatives by newsletter and follow-up telephone calls soliciting comments. Some tribal representatives commented that existing treaty rights should continue to be protected and that interpretation in the park should include the American Indian viewpoint. Conversations have been ongoing throughout the planning process to inform the tribes about the progress of the plan and identify how and to what extent they would like to be involved. The traditionally associated American Indian tribes were given an opportunity to review and comment on the *Revised Draft General Management Plan* prior to the public release. The tribes were provided an electronic copy of the document and consultation meetings were held on June 30, 2011, and June 13, 2012.

AGENCIES AND ORGANIZATIONS RECEIVING A COPY OF THIS DOCUMENT

FEDERAL AGENCIES

Advisory Council on Historic Preservation
U.S. Environmental Protection Agency
U.S. Army Corps of Engineers
U.S. Department of the Interior
- National Park Service
- Fish and Wildlife Service

U.S. Department of Agriculture
- Natural Resources Conservation Service

U.S. SENATORS AND REPRESENTATIVES

Honorable Charles Grassley, U.S. Senator
Honorable Tom Harkin, U.S. Senator
Honorable Bruce Braley, U.S. Representative
Honorable Tom Latham, U.S. Representative

IOWA STATE OFFICIALS

The Honorable Terry Branstad, Governor
Roger Thomas, State Representative
Patti Ruff, State Representative
Brian Schoenjahn, State Senator
Mary Jo Wilhelm, State Senator

IOWA STATE AGENCIES

Iowa State Historic Preservation Officer
Iowa Department of Cultural Affairs
Iowa Natural Heritage Foundation
Iowa Department of Natural Resources
Iowa Department of Transportation
Yellow River State Forest
Pike's Peak State Park

TRADITIONALLY ASSOCIATED AMERICAN INDIAN TRIBES

Ho Chunk Nation of Wisconsin (formerly the Wisconsin Winnebago Tribe)
Iowa Tribe of Kansas and Nebraska
Iowa Tribe of Oklahoma
Otoe-Missouria Tribe of Indians, Oklahoma
Lower Sioux Indian Community in the State of Minnesota
Prairie Island Indian Community in the State of Minnesota
Sac & Fox Tribe of the Mississippi in Iowa
Sac & Fox Nation of Missouri in Kansas and Nebraska
Sac & Fox Nation, Oklahoma
Shakopee Mdewakanton Sioux Community of Minnesota
Upper Sioux Community, Minnesota
Winnebago Tribe of Nebraska

PREPARERS AND CONSULTANTS

DENVER SERVICE CENTER

Nell Blodgett, GIS Lead—Responsible for document maps.

Kerri Cahill, Visitor Use Management Team Lead—Responsible for development and review of user capacity section.

Craig Cellar, Former Project Manager/ Former Cultural Resource Specialist (now retired)—Responsible for project coordination, cultural resources sections of planning, affected environment, and impact analysis.

Jan Harris, Chief, Planning Branch 3(now retired) Responsible for document review.

Cynthia Nelson, Chief, Planning Branch, Responsible for document review.

Leslie Petersen, Cultural Resource Specialist—Responsible for cultural resources sections of planning, affected environment, and impact analysis.

Ericka Pilcher, Visitor Use Resource Specialist—Responsible for development of user capacity section.

Kate Randall, Project Manager/Landscape Architect—Responsible for project coordination and document production.

Matthew Safford, Natural Resource Specialist/Former Project Manager—Responsible for natural resources, socioeconomic, and monument operations sections of planning, affected environment, and impact analysis.

Brenda Todd, Cultural Resource Specialist—Responsible for cultural resources section of planning.

HARPERS FERRY CENTER

Richard Jones, Interpretive Planner—Responsible for visitor use and experience sections of planning, affected environment, and impact analysis.

EFFIGY MOUNDS NATIONAL MONUMENT

Kenneth Block, Former Chief Ranger

Phyllis Ewing, Former Superintendent

Sharon Greener, Administrative Assistant

James Nepstad, Superintendent

Rodney Rovang, Natural Resources Manager

Thomas Sinclair, Chief of Maintenance

Jessica Salesman, Biological Science Technician

Friday Wiles, Administrative Officer

MIDWEST REGIONAL OFFICE

Michael Evans, Ethnographer/Acting Superintendent

Ruth Heikkinen, Planning and Compliance Division Chief—Quality review and contributor to sections.

Anne Vawser, Cultural Resource Specialist

Sändra Washington, Former Chief of Planning; Assistant Regional Director for Planning, Construction, Communications, and Legislation

PUBLICATION SERVICES

Jim Corbett, Visual Information Services Supervisor, Denver Service Center

Glenda Heronema, Former Visual Information Specialist, Denver Service Center (now retired)

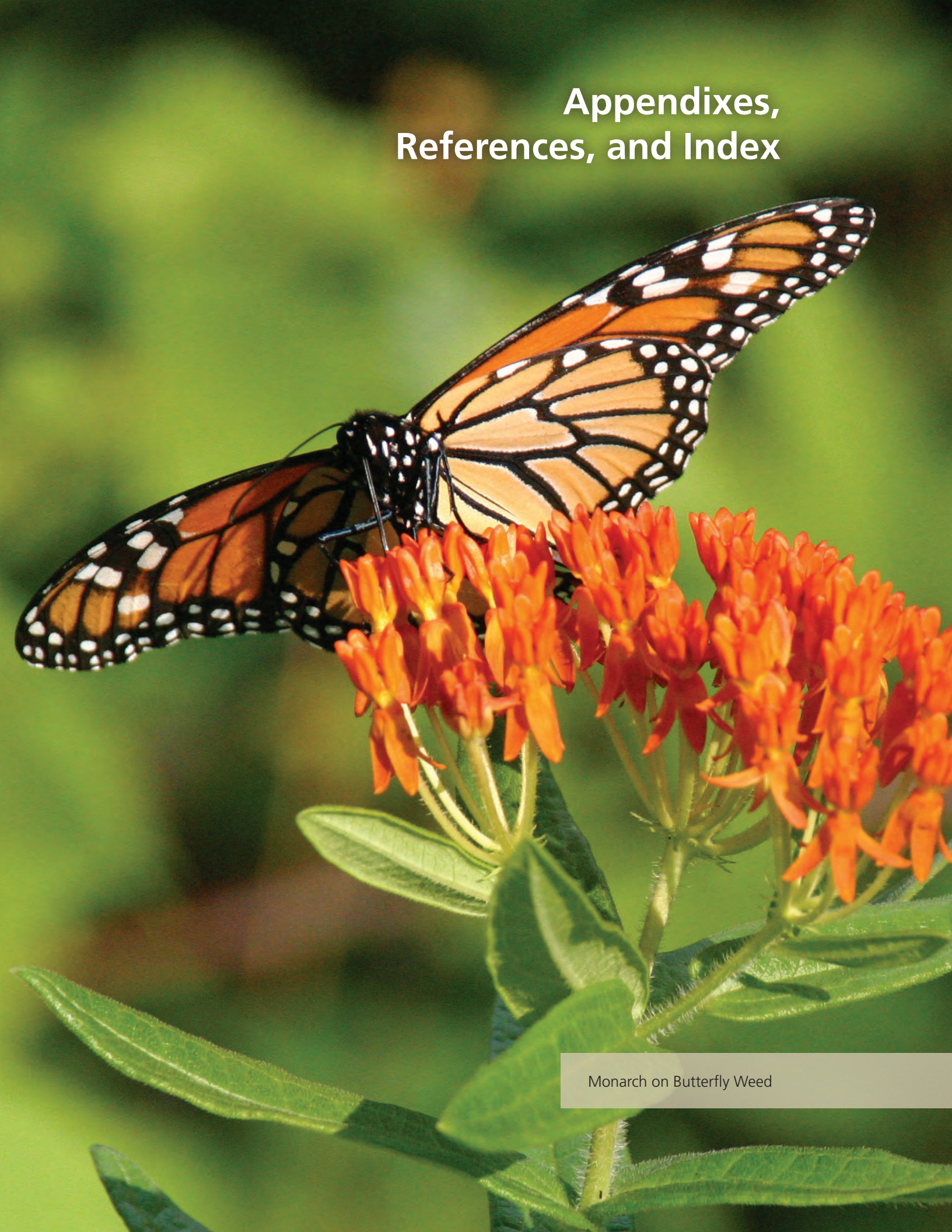
June McMillen, Writer/Editor, Denver Service Center (now retired)

OTHER

Patt Murphy, Iowa Tribe of Kansas and Nebraska

Don Weeks, NPS Water Resources Division

Appendixes, References, and Index



Monarch on Butterfly Weed

APPENDIX A: LEGISLATION SUMMARY

Effigy Mounds National Monument, Iowa —

- Presidential Proclamation No. 2860, Oct. 25, 1949, 64th Statutes at Large, 81st Congress, 2d Session, 64 part 2:A371
- Public Law 87-44, May 27, 1961, 75 Stat. 88
- Public Law 106–323, Oct. 19, 2000, 114 Stat. 1289

Presidential Proclamation 2860 established Effigy Mounds National Monument because of "... 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."

The proclamation also included this statement: "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."

Public Law 87-44 added 272 acres of land to the monument, ". . . for the purposes of preserving certain prehistoric Indian mounds and protecting existing wildlife and other natural values . . ."

Public Law 106-323 allowed for additional lands (Ferguson/Kistler Tract and the Riverfront Tract) to be purchased from willing sellers and adjusted the monument boundary to include these lands. The Ferguson/Kistler Tract is now called the Heritage Addition.

APPENDIX B: LETTERS TO AND FROM THE U. S. FISH AND WILDLIFE SERVICE AND IOWA DEPARTMENT OF NATURAL RESOURCES

United States Department of the Interior

NATIONAL PARK SERVICE
DENVER SERVICE CENTER
12795 W. ALAMEDA PARKWAY
P.O. BOX 25287
DENVER, COLORADO 80225-0287

In reply refer to:
EFMO (85825)

December 29, 2004

Supervisor
Rock Island Ecological Services Field Office
4469 48th Avenue Court
Rock Island, IL 61201

The National Park Service is starting development of a General Management Plan for Effigy Mounds National Monument located in Allamakee and Clayton counties, Iowa (map attached).

This long-term, comprehensive plan will define overall management goals and objectives, identify resources that need protection and prescribe general management actions at the Monument for the next 15-20 years. Specific resources or areas are managed under separate, lower level plans based on the General Management Plan.

As the Project Manager for this federal action, I am requesting a current list of federally-listed or any other special status species that might occur in the vicinity of Effigy Mounds, and designated critical habitat, if any, for such species.

This letter also serves as a record that the National Park Service is initiating consultation with your agency pursuant to the requirements of the Endangered Species Act and National Park Service Management Policies.

I appreciate your attention to this inquiry and look forward to working with your office throughout this planning effort. Please send any responses to:

Matthew Safford
National Park Service (DSC-P)
12795 W. Alameda Parkway
P.O. Box 25287
Denver, CO 80225-0287
Phone: (303) 969-2898
Email: <matthew_safford@nps.gov>

Sincerely,

Matthew Safford
Planning Project Manager

Received DSC-P
JAN 19 2005

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Rock Island Field Office
4469 48th Avenue Court
Rock Island, Illinois 61201
Phone: (309) 793-5800 Fax: (309) 793-5804

IN REPLY REFER TO:
FWS/RIFO

January 13, 2005

Mr. Mathew Safford
National Park Service
Denver Service Center
12795 W. Alameda Parkway
P.O. Box 25287
Denver, Colorado 80225-0287

Dear Mr. Safford:

This is in response to your letter of December 29, 2004, regarding the development of a General Management Plan for Effigy Mounds National Monument in Allamakee and Clayton Counties, Iowa.

To facilitate compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, Federal agencies are required to obtain from the Fish and Wildlife Service information concerning any species, listed or proposed to be listed, which may be present in the area of a proposed action. Therefore, we are furnishing you the following list of species which may be present in Allamakee and Clayton Counties, Iowa:

Classification	Common Name (Scientific Name)	Habitat
Threatened	Bald eagle (*Haliaeetus leucocephalus*)	Breeding and wintering
Threatened	Prairie bush-clover (*Lespedeza leptostachya*)	Dry to mesic prairies
Threatened	Western prairie fringed orchid (*Platanthera praeclara*)	Wet grassland habitats
Threatened	Northern monkshood (*Aconitum novaboracense*)	North-facing slopes

Endangered	Higgins' eye pearly mussel (*Lamisilis higginsii*)	Mississippi River
Endangered	Iowa pleistocene snail (*Discus macclintocki*)	Algific talus slopes

The threatened **bald eagle** (*Haliaeetus leucocephalus*) potentially occurs statewide and is listed as breeding and wintering in Allamakee and Clayton Counties. During the winter, this species feeds on fish in the open water areas created by dam tailwaters, the warm water effluents of power plants and municipal and industrial discharges, or in power plant cooling ponds. The more severe the winter, the greater the ice coverage and the more concentrated the eagles become. They roost at night in groups in large trees adjacent to the river in areas that are protected from the harsh winter elements. They perch in large shoreline trees to rest or feed on fish. There is no critical habitat designated for this species. The eagle may not be harassed, harmed, or disturbed when present nor may nest trees be cleared.

The **prairie bush clover** (*Lespedeza leptostachya*) is listed as threatened and considered to potentially occur statewide in Iowa, including Allamakee and Clayton Counties. It occupies dry to mesic prairies with gravelly soil. There is no critical habitat designated for this species. Federal regulations prohibit any commercial activity involving this species or the destruction, malicious damage, or removal of this species from Federal land or any other lands in knowing violation of State law or regulation, including State criminal trespass law. This species should be searched for whenever prairie remnants are encountered.

The **western prairie fringed orchid** (*Platanthera praeclara*) is listed as threatened and considered to potentially occur statewide in Iowa, including Allamakee and Clayton Counties. It occupies wet to mesic grassland habitats. There is no critical habitat designated for this species. Federal regulations prohibit any commercial activity involving this species or the destruction, malicious damage, or removal of this species from Federal land or any other lands in knowing violation of State law or regulation, including State criminal trespass law. This species should be searched for whenever wet prairie remnants are encountered.

The **northern monkshood** (*Aconitum novaboracense*) is listed as threatened in Allamakee and Clayton Counties. It occupies north-facing slopes in the driftless area of northeast Iowa and one slope along the Iowa River. There is no critical habitat designated for this species. Federal regulations prohibit any commercial activity involving this species or the destruction, malicious damage, or removal of this species from Federal land or any other lands in knowing violation of State law or regulation, including State criminal trespass law.

The **Higgins eye pearly mussel** (*Lampsilis higginsii*) is listed as endangered for the Mississippi River north of Lock and Dam 20 which includes Allamakee and Clayton Counties, Iowa. This species prefers sand/gravel substrates with a swift current and is most often found in the main channel border or an open, flowing side channel.

Ms. Marsha Cory 3

While there is no designated critical habitat, the Higgins eye Recovery Team has designated habitats **essential** to the recovery of the species. These areas include Allamakee County, Iowa (river miles 655.8-658.4R); Harper's Slough area, Allamakee County, Iowa (river mile 639-641.4R); Marquette-McGregor area, Clayton County, Iowa (river mile 634-636); McMillan Island area, Clayton County, Iowa (river mile 616.4-619.1R); Cordova, Rock Island County, Illinois (river mile 503-505.5L); and Sylvan Slough, Rock Island, Illinois (river mile 485.5-486L).

The endangered **Iowa pleistocene snail** (*Discus macclintocki*) is found on north-facing slopes of the driftless area in Clayton County. It occupies algific (cold-producing) talus slopes at the outlet of underground ice caves along limestone bluffs within a narrow regime of soil moisture and temperature. There is no critical habitat designated. It must not be harmed, harassed, or disturbed.

These comments provide technical assistance only and do not constitute a report of the Secretary of the Interior on a project within the meaning of Section 2(b) of the Fish and Wildlife Coordination Act, do not fulfill the requirements under Section 7 of the Endangered Species Act, nor do they represent the review comments of the U.S. Department of the Interior on any forthcoming environmental statement.

If you have any questions regarding our comments, please contact Kristen Lundh of my staff at (309) 793-5800 ext. 215.

Sincerely,

Richard C. Nelson
Field Supervisor

S:\Office Users\Kristen\Technical Assistance
\Section 7\2004\Iowa\Allamakee + National Park Service 1-12-05

Received DSC-P

JAN 27 2005

Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

January 24, 2005

Mr. Mathew Safford
National Park Service (DSC-P)
12795 West Alameda Parkway
P.O. Box 25287
Denver, CO 80225-0287

RE: Request for a list of records for state-listed or special status species within Effigy Mounds National Monument consisting of the North Unit, the South Unit and Sny McGill

Dear Mr. Safford:

Per your request, please find enclosed a diskette containing our computer records for Iowa listed endangered, threatened and special concern species as per your request. Please note that we have included those records that were mapped within all of T96N R3W, T95N R3W and within Section 23 T94N R3W.

If you have any questions about this letter or if you require further information, please contact me at (515) 281-8967.

Sincerely,

Keith L. Dohrmann

KEITH L. DOHRMANN, ENVIRONMENTAL SPECIALIST
POLICY AND COORDINATION SECTION
CONSERVATION AND RECREATION DIVISION

Attachment: Diskette with ArcView files for the data requested
Mapped area

FILE COPY: Keith L. Dohrmann

05-3382L.doc

WALLACE STATE OFFICE BUILDING / 502 EAST 9th STREET / DES MOINES, IOWA 50319
515-281-5918 TDD 515-242-5967 FAX 515-281-6794 www.iowadnr.com

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, Iowa 52146

IN REPLY REFER TO:

D18 (DSC-P)
EFMO 85825

March 27, 2012

Kelly Poole
Environmental Review for Natural Resources
Conservation and Recreation Division
Iowa Department of Natural Resources
502 E 9th St.
Des Moines, IA 50319-0034

Reference: Effigy Mounds National Monument General Management Plan

Dear Ms. Poole,

The National Park Service (NPS) is continuing to prepare a General Management Plan for Effigy Mounds National Monument. We first contacted your office in 2005 to initiate informal consultation on the proposed plan by requesting a current list of state listed or special status species that may inhabit the monument. The National Park Service is required to maintain an up-to-date management plan for all units in the national park system. The purpose of this plan is to ensure the park has a clearly defined direction for resource protection and visitor use. General management plans will be reviewed and revised as necessary to keep them current. It is anticipated that such reviews will be needed every 10 to 15 years.

Based on the list provided by your office and professional judgment on what species would be affected by the proposed actions, we are addressing potential impacts to state listed species.

To date, three newsletters, a *Draft General Management Plan*, and a *Revised Draft General Management Plan* have gone out to the public. Four public meetings were held in Iowa and Wisconsin following the publication of the *Revised Draft General Management Plan*. Comments were received from the public and from two government agencies, three nongovernmental organizations and educational institutions, and one American Indian tribe. Most comments were focused on concerns related to the future location of the museum archives and storage, access to the Heritage Addition, and past development and actions of the National Park Service. All of these comments were taken into consideration and appropriate changes to the document have been made.

An internal draft of the *Final General Management Plan/Environmental Impact Statement* is provided for your review and concurrence on the plan's effect on listed species (see pages 113-116 and 159-162). Please provide a written response no later than May 25, 2012. Thank you in advance for your consideration of this GMP/EIS. If you have any questions or require additional information, please contact me at (563) 873-3491, extension 101, or Ms. Kate Randall (Project Manager) at (303) 969-2237.

Sincerely,

James A. Nepstad
Superintendent

"Poole, Kelly [DNR]" <Kelly.Poole@dnr.iowa.gov>
06/28/2012 10:40 AM

To "kate_randall@nps.gov" <kate_randall@nps.gov>
cc
bcc
Subject FW: Effigy Mounds National Monument General Management Plans

From: Poole, Kelly [DNR]
Sent: Thursday, June 07, 2012 11:10 AM
To: 'kate.randall@nps.gov'
Subject: Effigy Mounds National Monument General Management Plans

Kate,
As we discussed by phone, the NPS staff coordinated with DNR staff during the updating of the management plan. Therefore the DNR does not have any additional comments to internal draft of the Final General Management Plan/Environmental Impact Statement.
Regards, Kelly

~~~~~~

Kelly Poole
Iowa Department of Natural Resources
Land and Waters Bureau
502 E 9th Street | Des Moines, IA 50319
Ph. 515.281.8967
~~~~~~

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, Iowa 52146

IN REPLY REFER TO

D18 (DSC-P)
EFMO 85825

March 27, 2012

Richard Nelson
U.S. Fish and Wildlife Service
Rock Island Field Office
1511 47th Avenue
Moline, IL 61265

Reference: Effigy Mounds National Monument General Management Plan

Dear Mr. Nelson,

The National Park Service (NPS) is continuing to prepare a General Management Plan for Effigy Mounds National Monument. We first contacted your office in 2005 to initiate informal consultation on the proposed plan by requesting a current list of federally listed and candidate species; designated critical habitat; and other species or habitats of concern that may inhabit the monument. The National Park Service is required to maintain an up-to-date management plan for all units in the national park system. The purpose of this plan is to ensure the park has a clearly defined direction for resource protection and visitor use. General management plans will be reviewed and revised as necessary to keep them current. It is anticipated that such reviews will be needed every 10 to 15 years.

Based on the list provided by your office and professional judgment on what species would be affected by the proposed actions, even though no adverse impacts are anticipated we are addressing potential impacts to Higgins eye pearlymussel, Iowa Pleistocene snail, prairie bush-clover, western prairie fringed orchid, and northern monkshood.

To date, three newsletters, a *Draft General Management Plan*, and a *Revised Draft General Management Plan* have gone out to the public. Four public meetings were held in Iowa and Wisconsin following the publication of the *Revised Draft General Management Plan*. Comments were received from the public and from two government agencies, three nongovernmental organizations and educational institutions, and one American Indian tribe. Most comments were focused on concerns related to the future location of the museum archives and storage, access to the Heritage Addition, and past development and actions of the National Park Service. All of these comments were taken into consideration and appropriate changes to the document have been made.

An internal draft of the *Final General Management Plan / Environmental Impact Statement* is provided for your review and concurrence with the plan's impact on listed species (see pages 113-115 and 159-162). Please provide a written response no later than May 25, 2012. Thank you in advance for your consideration of this GMP/EIS. If you have any questions or require additional information, please contact me at (563) 873-3491, extension 101, or Ms. Kate Randall (Project Manager) at (303) 969-2237.

Sincerely,

James A. Nepstad
Superintendent

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Rock Island Field Office
1511 47th Avenue
Moline, Illinois 61265
Phone: (309) 757-5800 Fax: (309) 757-5807

IN REPLY REFER TO:
FWS/RIFO

April 23, 2012

Mr. James A. Nepstad
National Park Service
Effigy Mounds National Monument
151 Hwy 76
Harpers Ferry, Iowa 52146

Dear Mr. Nepstad:

This is in response to your letter and corresponding Final General Management Plan and Environmental Impact Statement for Effigy Mounds National Monument received March 27, 2012. In your letter you requested our concurrence that the management procedures within the updated General Management Plan are not likely to adversely affect the Higgins eye pearlymussel *(Lampsilis higginsii)*, Iowa Pleistocene snail *(Discus macclintocki)*, northern monkshood *(Aconitum noveboracense)*, prairie bush clover *(Lespedeza leptostachya)*, and western prairie fringed orchid *(Platanthera preaclara)*.

In the current plan, three alternatives have been evaluated. Under Alternative A, there would be no changes to the current management plan within the park and no new environmental impacts are expected. Under this alternative you determined that there would be no effect to listed species. Under Alternative B, a large portion of the monument would be zoned as backcountry and a virtual research center would be created to collect and share information on mound research and preservation. Alternative B is the National Park Service preferred alternative. Under Alternative C, more of the monument would be placed in a "discovery zone" that would allow for more visitor amenities while a research center would be developed outside of the monument. Under Alternatives B and C, there would be some changes to the development footprint of the park. These two alternatives would allow better access to the South Unit by connecting the Yellow River Bridge and trail to the trails of the South Unit, and designate the Yellow River as a national wild and scenic river. You determined that adoption of either Alternative B or C would be not likely to adversely affect any federally listed species.

Currently there are no known occurrences of the Iowa Pleistocene snail or northern monkshood within the park boundary although suitable habitat may occur. The Higgins eye pearlymussel is found in the Mississippi River outside the park boundary. There are no known occurrences

Mr. James A. Nepstad 2

of the western prairie fringed orchid or prairie bush clover within the park boundary. Under Alternatives B and C you state that any construction in previously undeveloped areas of the park would require a complete clearance by qualified personnel to ensure that no special status species (including federally threatened and endangered species) would be harmed.

Based on the above information we concur that adoption of the Effigy Mounds National Monument General Management Plan is not likely to adversely affect the Higgins eye pearlymussel, Iowa Pleistocene snail, northern monkshood, prairie bush clover, and western prairie fringed orchid.

These comments are provided as technical assistance in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq).

If you have any questions regarding our comments, please contact Kristen Lundh of my staff at (309) 757-5800, extension 215.

Sincerely,

Richard C. Nelson
Field Supervisor

S:\Office Users\Kristen\Technical Assistance\Section 7\2012\Concurrence\NPS Effigy Mounds General Management Plan.doc

APPENDIX C: LETTERS TO AND FROM THE IOWA STATE HISTORIC PRESERVATION OFFICER, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND AMERICAN INDIAN TRIBES

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 Hwy. 76
Harpers Ferry, Iowa 52146-7519

IN REPLY REFER TO:

Notified Doug Jones of this letter being sent to Ms. Walker 6/15/05 Left voice mail message

D18(EFMO)

June 15, 2005

Ms. Anita Walker, SHPO
State Historical Society of Iowa
Capitol Complex
East 6th and Locust Street
Des Moines, Iowa 50319

Dear Ms. Walker:

Reference: Effigy Mounds National Monument, General Management Plan and Environmental Impact Statement

Subject: Initiation of Section 106 Compliance

Over the next several years, the National Park Service will be preparing a combined general management plan and environmental impact statement for Effigy Mounds National Monument in Allamakee and Clayton counties, Iowa, a property listed on the National Register of Historic Places. The general management plan portion will guide monument operations and resource management for the next fifteen to twenty years. The environmental impact statement portion will provide an overall decision-making framework for long-term management direction. Important issues and concerns facing national monument staff will be identified through public scoping along with a reasonable range of management alternatives. These will be analyzed in the environmental impact statement for each alternative's potential environmental consequences on both cultural and natural resources.

In accordance with the consultation process outlined in the Advisory Council Regulations at 36 CFR 800, and the 1995 Programmatic Agreement among the National Conference of State Historic Preservation Officers, the Advisory Council on Historic Preservation, and the National Park Service, your expertise and involvement in the planning process are requested.

The planning team will be multi-disciplinary with cultural and natural resources specialists. Other team members will be identified later. Funding for FY 2005 is minimal so the bulk of the data gathering will occur in FY 2006, beginning October 1st of

this year, when the full team expects to visit the national monument. Any issues, concerns, or information you might wish to pass along at this time would be most appreciated.

Should you or any member of your staff desire to participate as a full member of the planning team, please let me know. Regardless, of the level of participation you choose, we will keep you informed about our progress throughout the planning effort, including the schedule of any public meetings. The draft general management plan/environmental impact statement will be sent to you for review and comment.

We look forward to your involvement and believe that your participation in the planning effort for Effigy Mounds National Monument will result in better resources management.

Thank you in advance for your consideration. If you have any questions or require additional information, please contact me at (563) 873-3491 or Mr. Matthew Safford (Project Manager) at (303) 969-2898.

Sincerely,

Phyllis Ewing
Superintendent

FILE COPY

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 Hwy. 76
Harpers Ferry, Iowa 52146-7519

IN REPLY REFER TO:

October 25, 2005

D18(EFMO)

Mr. Leonard Wabasha
NAGPRA Representative
Shakopee Mdewakanton Sioux
2330 Sioux Trail, NW
Prior Lake, MN 55372

Dear Mr. Wabasha:

The National Park Service has recently initiated the planning process for the development of a General Management Plan (GMP) for Effigy Mounds National Monument in Allamakee and Clayton counties, Iowa.

The process of developing a GMP follows a series of prescribed steps and will take approximately three to five years to complete. The process is deliberative and intended to build consensus among the many participants, assure logic and consistency in plan proposals, and provide for rational decision-making. The GMP project planning team will comprehensively analyze the national monument's cultural and natural resources, adjacent land uses, and interpretive themes. It will also examine the national monument's role in the context of the larger community, region, and National Park system as well as visitor use. This analysis will provide a framework to guide resources management. Public involvement from all constituencies will be sought throughout the course of the planning process.

The planning team and I invite your participation in this planning effort. Since the national monument is a very special place to so many people it is crucial for us to listen, understand, and consider your views throughout the planning process.

There are several ways that you may participate:

sent to attorney 1-31

1. As a full team member - attending all planning sessions at the national monument. Either you or someone you delegate would attend all planning meetings to craft management profiles, alternative concepts, alternatives development, and to attend public meetings. This would occur 5-8 times during the project.
2. As a participant reviewer - receiving for review and comment specific products prepared by the team. Rather than attending the planning session, you or your delegate would be sent specific products to keep you aware of the actions of the plan and for your review and comment.
3. As a reviewer of the draft and final plans - this would entail your review and comment only at the draft and final plan stages, similar to the general public.
4. Or, you may delegate your participation to another person whom you trust to represent your tribal interests. In the past this has generally been a representative of another tribe with similar interests for whom the travel is not such a burden. In this instance, you would still be provided with draft and final plans for your review and comment.

Planning will begin with public meetings on November 14 & 15. Public meetings will seek the comment of tribes, the general public, and other concerned agencies, organizations and government entities. You will be receiving a newsletter concerning these public meetings in the near future.

In the meantime, should you have questions about the process or your participation, please do not hesitate to call me. My number is (563) 873-3491.

We hope that you decide to help us with the planning process for Effigy Mounds National Monument. Your participation will help us to better understand the needs of your people and to better protect and sensitively interpret the site to visitors. I look forward to working with you in the upcoming months on this very important and challenging project.

Sincerely,

Phyllis Ewing
Superintendent

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 Hwy. 76
Harpers Ferry, Iowa 52146-7519

March 13, 2006

IN REPLY REFER TO:

D18(EFMO)

Mr. Leonard Wabasha
NAGPRA Representative
Shakopee Mdewakanton Sioux
2330 Sioux Trail, NW
Prior Lake, Minnesota 55372

Dear Mr. Wabasha:

The National Park Service is continuing the planning process for the development of a General Management Plan (GMP) for Effigy Mounds National Monument in Allamakee and Clayton counties, Iowa.

The planning team and I, again, invite your participation in this continuing effort. Since the national monument is a very special place to so many people it is crucial for us to listen, understand, and consider your views throughout the planning process.

The next phase of the planning will take place with a workshop on March 28-30, 2006. The primary goal of the workshop is to develop a reasonable range of alternative concepts that address the issues, are within laws and policies, and uphold the purpose and significance of the monument. Part of the alternatives development process involves crafting management prescriptions and zoning schemes. This workshop will take place at the monument visitor center.

The process of developing a GMP follows a series of prescribed steps and will take approximately three to five years to complete. We are currently about one year into the process. The GMP project planning team will comprehensively analyze the national monument's cultural and natural resources, adjacent land uses, and interpretive themes. It will also examine the national monument's role in the context of the larger community, region, and National Park system as well as visitor use. This analysis will provide a framework to guide resources management.

We hope that you decide to help us with the planning process for Effigy Mounds National Monument. Your participation will help us to better understand the needs of your people and to better protect and sensitively interpret the site to visitors.

In the meantime, should you have questions about the process or your participation, please do not hesitate to call me. My number is (563) 873-3491. If you should decide you would like to attend the workshop, please let me know and I can provide you with suggested accommodations.

Sincerely,

Phyllis Ewing
Superintendent

FILE COPY

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, Iowa 52146

IN REPLY REFER TO:

March 31, 2011

H42(EFMO)
xD18

Ms. Louise Brodnitz
Advisory Council on Historic Preservation
1100 Penn Ave.
Washington, D.C. 20004

Dear Ms Brodnitz.

I would like to invite you and/or your staff to attend an introductory meeting here at the park on June 29-30, 2011. Representatives from the State Historic Preservation Office, Office of the State Archeologist, and members of the culturally affiliated tribes have been invited as well. My intent is to have the meeting be very focused, with specific agenda items that will be shared (along with as much support documentation as possible) with everyone well in advance of the meeting. I believe consultation is meaningful only if all participants feel they are free not only to speak, but to choose what we speak about. So even though I may prepare and distribute the first draft agenda soon, I hope you'll also suggest topics that you feel should be added to the agenda and discussed at this meeting. The first draft agenda will simply serve as a way to get that discussion started.

I would also like to make sure you know about a multi-park planning effort that is getting underway at this time - the Exotic Plant Management Plan. Effigy Mounds National Monument and 14 other National Park Service units in the region are initiating the development of a plan to guide the identification, containment, and control of invasive exotic plants within the monument. We're still at a very early stage in the development of this plan. It hasn't been drafted yet, so there's nothing to show you, but that also means that advice you give us now can be very influential. You are free to send us your comments on this important planning effort at any time while it is under development, but if you would like to have your comments considered prior to the development of the draft plan, it would be best to get us those comments by the end of April. You can learn more about this planning effort at http://tinyurl.com/4au9mky. Disregard what it says about a March 1 deadline for scoping comments. This is a matter that is open for consultation throughout the planning effort.

Finally, I would like to provide you with an opportunity to preview the Revised Draft General Management Plan (GMP) for Effigy Mounds National Monument. We hope to release this very important plan to the public sometime this summer, but there is a brief window of opportunity for you to see it between now and when it is scheduled to go to the printers. Since it hasn't been printed, I can't send you a hardcopy yet, but an electronic version is on the enclosed CD. We will send you hardcopies of this draft plan once it is officially released, and you will be able to comment on it for several months following that release. The intent of this early preview is to catch any big problems that might exist *before we send this document to the printers*. We don't need an exhaustive review of it at this time, but if there are big problems with the plan from your perspective, I would like to get them fixed prior to the printing. **If you are interested in participating in this preview, provide us with your comments by April 29, 2011. Note that this version has not been authorized for public distribution, so please do not distribute your copies any further than you need to.** I anticipate having a discussion of the General Management Plan at our June meeting, so this also provides you with a little extra time to get up to speed with its contents.

I would be pleased if you could attend this meeting in June. In light of recent park history, and in the spirit of openness, I thought it would be good to start off with all parties present for at least some of the initial discussions.

Thank you for considering your attendance. If there is anything that you need from me, please do not hesitate to get in touch. All of my contact information is below.

James A. Nepstad
Superintendent
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, IA 52146
563-873-3491 x101 (voice)
800-886-0270 (secure fax)
jim_nepstad@nps.gov (e-mail)

Enclosure

cc:
Jerome Thompson, Interim State Historic Preservation Officer, State Historical Society of Iowa
John Doershuk, State Archaeologist, Office of the State Archaeologist

FILE COPY

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, Iowa 52146

IN REPLY REFER TO:

March 31, 2011

H42(EFMO)
xD18

Mr. Jerome Thompson
State Historic Preservation Office
600 East Locust Street
Des Moines, Iowa 50319-0290

Dear Mr Thompson:

I appreciate you taking the time to meet with me earlier this month. Now that I'm somewhat settled in, I would like to start making some progress on some important matters.

I would like to invite you and/or your staff to attend an introductory meeting here at the park on June 29-30, 2011. Representatives from the Office of the State Archeologist, the Advisory Council on Historic Preservation, and members of the culturally affiliated tribes have been invited as well. My intent is to have the meeting be very focused, with specific agenda items that will be shared (along with as much support documentation as possible) with everyone well in advance of the meeting. I believe consultation is meaningful only if all participants feel they are free not only to speak, but to choose what we speak about. So even though I may prepare and distribute the first draft agenda soon, I hope you'll also suggest topics that you feel should be added to the agenda and discussed at this meeting. The first draft agenda will simply serve as a way to get that discussion started.

I would also like to make sure you know about a multi-park planning effort that is getting underway at this time - the Exotic Plant Management Plan. Effigy Mounds National Monument and 14 other National Park Service units in the region are initiating the development of a plan to guide the identification, containment, and control of invasive exotic plants within the monument. We're still at a very early stage in the development of this plan. It hasn't been drafted yet, so there's nothing to show you, but that also means that advice you give us now can be very influential. You are free to send us your comments on this important planning effort at any time while it is under development, but if you would like to have your comments considered prior to the development of the draft plan, it would be best to get us those

comments by the end of April. You can learn more about this planning effort at http://tinyurl.com/4au9mky. Disregard what it says about a March 1 deadline for scoping comments. This is a matter that is open for consultation throughout the planning effort.

Finally, as I mentioned when I was in Des Moines, I would like to provide you with an opportunity to preview the Revised Draft General Management Plan (GMP) for Effigy Mounds National Monument. We hope to release this very important plan to the public sometime this summer, but there is a brief window of opportunity for you to see it between now and when it is scheduled to go to the printers. Since it hasn't been printed, I can't send you a hardcopy yet, but an electronic version is on the enclosed CD. We will send you hardcopies of this draft plan once it is officially released, and you will be able to comment on it for several months following that release. The intent of this early preview is to catch any big problems that might exist *before we send this document to the printers*. We don't need an exhaustive review of it at this time, but if there are big problems with the plan from your perspective, I would like to get them fixed prior to the printing. **If you are interested in participating in this preview, provide us with your comments by April 29, 2011. Note that this version has not been authorized for public distribution, so please do not distribute your copies any further than you need to.** I anticipate having a discussion of the General Management Plan at our June meeting, so this also provides you with a little extra time to get up to speed with its contents.

I would be pleased if you could attend this meeting. If that's not possible, though, please keep in mind that I am always willing to travel to see you as well. But in light of recent park history, and in the spirit of openness, I thought it would be good to start off with all parties present for at least some of the initial discussions.

Thank you for considering your attendance. If there is anything that you need from me, please do not hesitate to get in touch. All of my contact information is below.

James A. Nepstad
Superintendent
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, IA 52146
563-873-3491 x101 (voice)
800-886-0270 (secure fax)
jim_nepstad@nps.gov (e-mail)

Enclosure

cc:
John Doershuk, State Archaeologist, Office of the State Archaeologist
Louise Brodnitz, Historic Preservation Specialist, Advisory Council on Historic Preservation

NOTE: This letter was sent to representatives from the 12 culturally associated American Indian Tribes

FILE COPY

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, Iowa 52146

IN REPLY REFER TO:

March 31, 2011

H42(EFMO)
xD18

Chairman Stanley Crooks
Shakopee Mdewakanton Sioux Community of Minnesota
2330 Sioux Trail NW
Prior Lake, MN 55372

Dear Mr. Crooks:

My name is Jim Nepstad, and I have recently arrived in northeast Iowa to serve as the new superintendent of Effigy Mounds National Monument.

I'm honored to be working here, and I want you to know that I am personally committed to responsible and respectful stewardship of this place. I am also very committed to maintaining an atmosphere of frequent and open consultation – not only concerning proposed undertakings in the park, but about any topic that you might feel is of importance to you or the people you serve.

I would like to personally invite you or a representative to attend an introductory meeting here at the park on June 29-30, 2011. Representatives from the State Historic Preservation Office, the Office of the State Archeologist, and the Advisory Council on Historic Preservation may be present at times as well. My intent is to have the meeting be very focused, with specific agenda items that will be shared (along with as much support documentation as possible) with everyone well in advance of the meeting. I believe consultation is meaningful only if all participants feel they are free not only to speak, but to choose what we speak about. So even though I may prepare and distribute the first draft agenda soon, I hope you'll also suggest topics that you feel should be added to the agenda and discussed at this meeting. The first draft agenda will simply serve as a way to get that discussion started.

I would also like to let you know about a multi-park planning effort that is getting underway at this time - the Exotic Plant Management Plan. Effigy Mounds National Monument and 14

other National Park Service units in the region are initiating the development of a plan to guide the identification, containment, and control of invasive exotic plants within the monument. We're still at a very early stage in the development of this plan. It hasn't been drafted yet, so there's nothing to show you, but that also means that advice you give us now can be very influential. You are free to send us your comments on this important planning effort at any time while it is under development, but if you would like to have your comments considered prior to the development of the draft plan, it would be best to get us those comments by the end of April. You can learn more about this planning effort at http://tinyurl.com/4au9mky. Disregard what it says about a March 1 deadline for scoping comments. This is a matter that is open for consultation throughout the planning effort.

Finally, I would like to provide you with an opportunity to preview the Revised Draft General Management Plan (GMP) for Effigy Mounds National Monument. We hope to release this very important plan to the public sometime this summer, but there is a brief window of opportunity for you to see it between now and when it is scheduled to go to the printers. Since it hasn't been printed, I can't send you a hardcopy yet, but an electronic version is on the enclosed CD. We will send you hardcopies of this draft plan once it is officially released, and you will be able to comment on it for several months following that release. The intent of this early preview is to catch any big problems that might exist *before we send this document to the printers*. We don't need an exhaustive review of it at this time, but if there are big problems with the plan from your perspective, I would like to get them fixed prior to the printing. **If you are interested in participating in this preview, provide us with your comments by April 29, 2011. Note that this version has not been authorized for public distribution, so please do not distribute your copies any further than you need to.** I anticipate having a discussion of the General Management Plan at our June meeting, so this also provides you with a little extra time to get up to speed with its contents.

I hope you will find that I am interested in the issues that are important to you. I am eager to learn, and I don't want to work here for too long before I have an opportunity to listen to what you have to say. If you or a representative are able to attend this consultation on June 29-30, please contact me at 563-873-3491, extension 101 or email me at jim_nepstad@nps.gov and I will have my staff provide you with details on how you may be reimbursed for certain expenses.

I would be honored if you could attend this meeting. If that's not possible, though, please consider this: with a little coordination I am perfectly willing to travel to see you as well. In the spirit of openness, I think it is best if the tribes continue the tradition of coming here for consultation on matters of importance to all affiliated tribes. But since one of the objectives for this meeting is also to provide an opportunity for introductions and to get to know each other, I want you to know that I am willing to come to a location of your choosing if you feel there might be some value in such a visit.

Thank you for considering your attendance. If there is anything that you need from me, please do not hesitate to get in touch. All of my contact information is below. I hope to meet you soon!

James A. Nepstad
Superintendent
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, IA 52146
563-873-3491 x101 (voice)
800-886-0270 (secure fax)
jim_nepstad@nps.gov (e-mail)

Enclosure

cc:
Glynn Crooks, Shakopee Mdewakanton Sioux Community of Minnesota
Leonard Wabasha, Shakopee Mdewakanton Sioux Community of Minnesota
Chairman:
Ho-Chunk Nation of Wisconsin
Iowa Tribe of Kansas and Nebraska
Iowa Tribe of Oklahoma
Lower Sioux Indian Community in the State of Minnesota
Prairie Island Indian Community in the State of Minnesota
Otoe-Missouria Tribe of Indians, Oklahoma
Sac & Fox Tribe of the Mississippi in Iowa
Sac & Fox Nation of Missouri in Kansas and Nebraska
Sac & Fox Nation, Oklahoma
Upper Sioux Community, Minnesota
Winnebago Tribe of Nebraska

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, Iowa 52146

IN REPLY REFER TO:

August 26, 2011

D18 EFMO

Mr. Jerome Thompson, Interim SHPO
State Historical Society of Iowa
600 East Locust Street
Des Moines, IA 50319-0209

Dear Mr. Thompson,

Since 2005, the National Park Service has been preparing a combined General Management Plan and Environmental Impact Statement (GMP/EIS) for Effigy Mounds National Monument in Allamakee and Clayton counties, Iowa, a property listed on the National Register of Historic Places. This plan will guide monument operations and resource management for the next fifteen to twenty years and provide a framework for managers to use in making decisions about how best to protect park resources, what levels and types of uses are appropriate, what facilities should be developed or removed, and how people should access the park. Important issues and concerns facing national monument staff have been identified through public scoping, and in May 2009 a Draft GMP/EIS was prepared.

This document replaces that Draft GMP/EIS. The revisions to the document are a result of an evaluation of past construction activities and practices in the park, particularly those with the potential to harm the archeological resources. To ensure the protection of the resources, the National Park Service has spent a significant amount of time in the past two years reassessing the proper role, function, and form of development in a landscape dominated by the mounds. As a result, the alternatives now propose far less development than the May 2009 version, and some delays were introduced into the planning effort.

In accordance with the consultation process outlined in the Advisory Council Regulations at 36 CFR 800, and the 2008 Programmatic Agreement among the National Conference of State Historic Preservation Officers, the Advisory Council on Historic Preservation, and the National Park Service, your expertise and continued involvement in the planning process are requested.

We are very interested in your views on this important new draft document, and believe that your participation in the planning effort for Effigy Mounds National Monument will result in better management of the park's resources. If you are interested in scheduling a meeting to discuss the plan, I would be happy to travel to Des Moines.

Your comments may be mailed to:

National Park Service
Denver Service Center – Planning
Kate Randall, Project Manager
12795 W. Alameda Parkway
PO Box 25287
Denver, CO 80225-0287

Thank you in advance for your consideration of this Revised Draft GMP/EIS. If you have any questions or require additional information, please contact me at (563) 873-3491, extension 101 or Ms. Kate Randall (Project Manager) at (303) 969-2237.

Sincerely,

James A. Nepstad
Superintendent

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, Iowa 52146

IN REPLY REFER TO:

D18 (DSC-P)
EFMO 85825

NOTE: This letter was sent to representatives from 12 traditionally associated American Indian tribes.

August 31, 2011

Mr. Anthony Reider
President, Executive Committee
Flandreau Santee Sioux
P.O. Box 283
Flandreau, SD 57028

Dear Mr. Reider,

Since 2005, the National Park Service has been preparing a combined General Management Plan and Environmental Impact Statement (GMP/EIS) for Effigy Mounds National Monument in Allamakee and Clayton counties, Iowa, a property with which your tribe is associated. This plan will guide monument operations and resource management for the next fifteen to twenty years and provide a framework for managers to use in making decisions about how best to protect park resources, what levels and types of uses are appropriate, what facilities should be developed or removed, and how people should access the park. Important issues and concerns facing national monument staff have been identified through public scoping, and in May 2009 a Draft GMP/EIS was prepared.

This document replaces that Draft GMP/EIS. The revisions to the document are a result of an evaluation of past construction activities and practices in the park, particularly those with the potential to harm the archeological resources. To ensure the protection of the resources, the National Park Service has spent a significant amount of time in the past two years reassessing the proper role, function, and form of development in a landscape dominated by the mounds. As a result, the alternatives now propose far less development than the May 2009 version, and some delays were introduced into the planning effort.

We would like to continue the consultation process that has been on-going since the beginning of this planning effort. Your views and expertise, and those of your employees and representatives, are requested.

We are very interested in your comments on this important new draft document, and believe that your participation in the planning effort for Effigy Mounds National Monument will result in better management of the park's resources. We will be scheduling a meeting with tribal leaders and representatives before the end of this calendar year to consult on this matter.

Although the public comment period for the Revised Draft GMP/EIS ends November 4, we will obviously accept your comments up until the document is once again modified for a final internal

review. We hope to have that version completed very early in 2012, so comments will have to be received by the end of this year in order to get incorporated.

Your comments may be mailed to:

National Park Service
Denver Service Center – Planning
Kate Randall, Project Manager
12795 W. Alameda Parkway
PO Box 25287
Denver, CO 80225-0287

Thank you in advance for your consideration of this Revised Draft GMP/EIS. If you have any questions or require additional information, please contact me at (563) 873-3491, extension 101 or Ms. Kate Randall (Project Manager) at (303) 969-2237.

Sincerely,

James A. Nepstad
Superintendent

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, Iowa 52146

IN REPLY REFER TO:

D18 (DSC-P)
EFMO 85825

Note: This letter was sent to representatives from 12 traditionally associated American Indian tribes.

March 27, 2012

Jon Greendeer - Chairperson
Ho-Chunk Nation
W9814 Airport Rd.
Black River Falls, WI 54615

Dear Chairperson Greendeer,

Since 2005, the National Park Service has been preparing a combined general management plan and environmental impact statement (GMP/EIS) for Effigy Mounds National Monument in Allamakee and Clayton Counties, Iowa, a property with which your tribe is associated. This plan will guide monument operations and resource management for the next 15 to 20 years and provide a framework for managers to use in making decisions about how best to protect park resources, what levels and types of uses are appropriate, what facilities should be developed or removed, and how people should access the park.

This document has gone through many changes over the years, but we believe it is now close to being finalized. You may recall that we last met to discuss the *Revised Draft Effigy Mounds National Monument General Management Plan / Environmental Impact Statement* in late June 2011, prior to it being released to the public for review. As a result of our meeting, and based on the feedback we received from you, changes were made to the document before it was released to the public in the fall. Additional changes have been made as a result of the public review. Before we consider this document to be final, we would like to consult with you one last time after you have had a chance to review it.

Your views and expertise, and those of your employees and representatives, are requested. After you have had a chance to read this GMP/EIS and give it some thought, we would like to schedule a meeting with you and/or your representatives to hear your views about changes that may be necessary before the document becomes final.

We are very interested in your thoughts on this important new document, and believe that your participation in the planning effort for Effigy Mounds National Monument will result in better management of the park's resources. We are hoping that we will be able to schedule a meeting during the month of May to consult on this matter.

Thank you in advance for your consideration of this GMP/EIS. If you have any questions or require additional information, please contact me at (563) 873-3491, extension 101, or Ms. Kate Randall (Project Manager) at (303) 969-2237.

Sincerely,

James A. Nepstad
Superintendent

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, Iowa 52146

IN REPLY REFER TO:

D18 (DSC-P)
EFMO 85825

March 27, 2012

Mr. John Doershuk
State Archaeologist
Office of the State Archaeologist
700 Clinton Street Building
Iowa City, Iowa 52242

Reference: Effigy Mounds National Monument General Management Plan

Dear Mr. Doershuk,

Enclosed is a copy of the Effigy Mounds National Monument internal draft of the *Final General Management Plan / Environmental Impact Statement* for your review and written concurrence. The plan consists of three alternatives, including a "no action" alternative. Alternative B, the NPS preferred alternative, focuses heavily on protecting the cultural resources of the park while providing some additional opportunities for visitors. Alternative C focuses more on visitor experience.

To date, three newsletters, a *Draft General Management Plan*, and a *Revised Draft General Management Plan* have gone out to the public. Four public meetings were held in Iowa and Wisconsin following the publication of the *Revised Draft General Management Plan*. Comments were received from the public and from two government agencies, three nongovernmental organizations and educational institutions, and one American Indian tribe. Most comments were focused on concerns related to the future location of the museum archives and storage, access to the Heritage Addition, and past development and actions of the National Park Service. All of these comments were taken into consideration and appropriate changes to the document have been made.

An internal draft of the *Final General Management Plan / Environmental Impact Statement* is provided for your review and concurrence on the determination of effects found on pages 129-147. Please provide a written response no later than May 25, 2012. If you have any questions or require additional information, please contact me at (563) 873-3491, extension 101. I am also happy to travel to your office to discuss the plan one final time. Thank you in advance for your consideration of this GMP/EIS.

Sincerely,

James A. Nepstad
Superintendent

"Doershuk, John F" <john-doershuk@uiowa.edu>
06/27/2012 04:26 PM

To "Kate_Randall@nps.gov" <Kate_Randall@nps.gov>
cc
bcc
Subject RE: Recommendations on Final GMP from June 13 Tribal/SHPO/OSA consultation

Kate Taylor Randall, LEED AP
Landscape Architect/Planner
National Park Service
Denver Service Center
12795 W. Alameda Pkwy.
P.O. Box 25287, Denver, CO 80228

I formally concur with the minutes of the June 13/14, 2012 consultation meeting held to discuss with NPS, tribal representatives, Iowa SHPO, and my office the final GMP for Effigy Mounds National Monument. The minutes accurately reflect the specific issues and wording that need adjustment in the final published version of the plan.

Thank you for the opportunity to comment.

John F. Doershuk, Ph.D.
State Archaeologist
University of Iowa
700 CLSB
Iowa City, Iowa 52242-1030
319-384-0751
http://www.uiowa.edu/~osa/index.html

United States Department of the Interior

NATIONAL PARK SERVICE
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, Iowa 52146

IN REPLY REFER TO:

D18 (DSC-P)
EFMO 85825

March 27, 2012

Mr. Douglas Jones
Iowa State Historic Preservation Office
600 E. Locust
Des Moines, Iowa 50319

Reference: Effigy Mounds National Monument General Management Plan,
R&C: 110703087

Dear Mr. Jones,

Enclosed is a copy of the Effigy Mounds National Monument internal draft of the *Final General Management Plan / Environmental Impact Statement* for your review and written concurrence under the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, the regulations of the Advisory Council on Historic Preservation and the Programmatic Agreement among the National Conference of State Historic Preservation Officers, the Advisory Council on Historic Preservation, and the National Park Service.

The plan consists of three alternatives, including a "no action" alternative. Alternative B, the NPS preferred alternative, focuses heavily on protecting the cultural resources of the park while providing some additional opportunities for visitors. Alternative C focuses more on visitor experience.

We received your comments on the *Revised Draft General Management Plan / Environmental Impact Statement* and have worked to make appropriate changes to the document in response to your comments or to provide a response as to why a suggested change was not made (see "Chapter 5: Consultation and Coordination," pages 211-213). We hope that the changes we have made to the document are satisfactory and that your office can provide us with written concurrence on the determination of effects (129-147).

An internal draft of the *Final General Management Plan / Environmental Impact Statement* is provided for your review and concurrence on the determination of effects found on pages 129-147. Please provide a written response no later than May 25, 2012. If you have any questions, I would enjoy the opportunity to meet with you and your staff in Des Moines to discuss this plan one final time. Please do not hesitate to call me at (563) 873-3491, extension 101. Thank you in advance for your consideration of this GMP/EIS.

Sincerely,

James A. Nepstad
Superintendent

IOWA DEPARTMENT OF
CULTURAL AFFAIRS
MARY TIFFANY COWNIE, DIRECTOR

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

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600 E. LOCUST
DES MOINES, IOWA
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CULTURALAFFAIRS.ORG

June 27, 2012

Jim Nepstad, Superintendent
Effigy Mounds National Monument
151 HWY 76
Harpers Ferry, IA 52146

Dear Jim:

I want to formally concur with the minutes of our June 13 and 14th meeting on review of the general management plan. They accurately reflect our discussions and identify specific points in the plan that need to be adjusted before it is final.

Sincerely,

Jerome L. Thompson
Administrator/SHPO

cc: Doug Jones, State Historic Preservation Office
John Doershuk, State Archaeologist
Kate Randall, National Park Service, Denver Service Center

APPENDIX D: YELLOW RIVER WILD AND SCENIC RIVER ASSESSMENT

Wild and Scenic River Eligibility and Suitability Assessment
Yellow River, Iowa

River Segment under Assessment
The segment of the Yellow River within the boundary of Effigy Mounds National Monument, Iowa, approximately 3.5 miles in length (map attached).

Purpose of Assessment
This report documents an assessment to determine if the Yellow River is eligible and suitable for inclusion in the National Wild and Scenic Rivers System.

Jurisdiction
The Yellow River is deemed "navigable" by the state of Iowa, so the water surface and water column are controlled by the state. River shores and bottom within the monument are property of the U.S. Government managed by the National Park Service. The river is managed under concurrent jurisdiction.

Legal and Policy Basis for Assessment
This assessment conforms with the Wild and Scenic Rivers Act of 1968 (P.L. 90-542); "National Wild and Scenic Rivers System; Final Revised Guidelines for Eligibility, Classification and Management of River Areas," which appeared in the *Federal Register* Vol. 47, No. 173 on September 7, 1982; and, "The Wild and Scenic River Study Process," a technical report prepared for the Interagency Wild and Scenic Rivers Coordinating Council, dated December 1999.

Section 1(b) of the Wild and Scenic Rivers Act (the Act) states

> "It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations."

"Free-flowing" means that a river or segment of river is existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures at the time any river is proposed for inclusion in the national wild and scenic rivers system shall not automatically bar its consideration.

Section 5(d)(1) of the act states that,

> "In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be

> evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved."

The assessment also conforms with NPS *Management Policies 2006* (§4.3.4), which says

> "Parks containing one or more river segments listed in the NPS National [Nationwide] Rivers Inventory… will comply with section 5(d)(1) of the Wild and Scenic Rivers Act, which instructs each federal agency to assess whether those rivers or segments are suitable for inclusion in the system. The assessments and any resulting management requirements may be incorporated into a park's general management plan."

Maintained by the National Park Service, the National Rivers Inventory (NRI) was compiled, in part, to fulfill the mandate of Section 5(d)(1) that federal agencies consider impacts on potential Wild and Scenic Rivers in all agency planning. This inventory, originally completed in 1982 and updated in 1993, seeks to identify such rivers based on the Act's basic eligibility criteria. Under a Presidential Directive issued in 1979, each federal agency, as part of its normal planning and environmental review processes, is required to take care to avoid or mitigate adverse effects to rivers in the NRI.

Thirty-five miles of the Yellow River, starting at Highway 60 near Myron, Iowa, and ending with the 3.5 mile segment through the boundary of Effigy Mounds National Monument to the Mississippi River, are listed on the NRI with six outstandingly remarkable values. The last mile, which at the time of the NRI listing was the only part of the river that flowed through the monument since its boundary had not yet been expanded, has been potentially classified as "scenic," but the first 34 miles have not been classified.

General Description of the Yellow River

The Yellow River flows for about 50 miles from its headwaters near Ossian, Iowa, before emptying into the Mississippi River near the monument headquarters. The Yellow is one of the fastest falling rivers in the state and provides excellent fishing and canoeing opportunities (NRI 1993). Camping and hiking opportunities exist along certain reaches.

The Yellow River watershed is located in northeastern Iowa's "Driftless Area." This 154,666-acre (62,640-ha) watershed has diverse topographic and natural resource features, along with a variety of resource-related problems similar to those found throughout the watersheds of most tributary streams feeding into the Upper Mississippi River. Situated within a karst region, approximately 90% of the Yellow River's flow comes from groundwater. The watershed is a diverse, mostly agricultural landscape of incised valleys and rolling uplands. Significant natural habitat exists in the watershed, particularly within its lower reaches where Effigy Mounds National Monument is located. Due to the rugged topography and drainage pattern of this portion of the Driftless Area, small rural communities are situated almost exclusively along the outer fringe of the Yellow River watershed (NPS 2003).

The lower 3 miles of the Yellow River can act as a backwater of the Mississippi River. Water movement in this reach is sluggish and the level can fluctuate with changes in the flow of either the Yellow or Mississippi rivers.

The state of Iowa manages use on the river surface, including boating and fishing. No hunting is allowed in the monument. The river bottom and shores in Effigy Mounds National Monument are owned by the U.S. Government and managed by the National Park Service. Recreational uses on the river include infrequent motorboating (only near the mouth of the river), canoeing/kayaking, and fishing from shore or boat.

Results of a limited 1982 study of water quality in the Yellow River showed good water quality. However, in more recent years, there have been fish kills related to the discharge of waste from a meat processing plant near Postville (a few miles upstream from where NRI-listed segment of the river begins). In 2006, a lawsuit challenging this discharge resulted in a settlement forcing a reduction. Additional water quality concerns include a portion of the Yellow River running through Effigy Mounds National Monument which is currently listed on Iowa's impaired waters list for high levels of fecal coliform bacteria and sedimentation due to agricultural runoff.

General Description of Effigy Mounds National Monument
Effigy Mounds National Monument was created in 1949. The purpose of the monument is to preserve outstanding representative examples of significant phases of Indian mound-building cultures in the American Midwest; protect wildlife and the natural values within the monument; and provide for scientific study and appreciation of its features – for the benefit of this and future generations.

ELIGIBILITY ASSESSMENT

Eligibility Criteria

According to the Wild and Scenic Rivers Act, a river or river segment must be free-flowing and possess one or more outstandingly remarkable values to be eligible for inclusion into the National Wild and Scenic Rivers System.

Following criteria established in the Wild and Scenic Rivers Act and guidelines in "*The Wild and Scenic River Study Process*," a technical paper of the Interagency Wild and Scenic Rivers Coordinating Council, the study team determined whether the inventory segment was free-flowing and possessed any outstandingly remarkable values (ORVs). The values considered were scenic, recreational, geological, fish and wildlife, historic, and cultural.

The listing of the Yellow River in the *Nationwide Rivers Inventory* indicates that the river is free-flowing and possesses the following outstandingly remarkable values: Scenery, Recreation, Geology, Wildlife, History, and Cultural. The following assessment considers the 3.5-mile segment within the current boundaries of the monument.

Free-Flowing Determination. Within Effigy Mounds National Monument, the Yellow River flows in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. Thus, the river segment under analysis is determined to be free-flowing in its entirety.

Outstandingly Remarkable Values. In order to be assessed as outstandingly remarkable, a river-related value must be a unique, rare, or exemplary feature that is significant when compared to other rivers on a regional scale defined in the study. All values being considered must be directly related to the river. Only one such value is needed for eligibility.

The region of comparison for each of the values is the Driftless Area of northeastern Iowa.

A review of existing studies and other information from a variety of sources, and professional judgment by members of the study team were the basis for the following analysis of possible ORVs.

Scenery: Forested bluffs, limestone cliffs, and the occasional waterfall can be seen from the river. The bluffs, rising up to 300 feet above the river, dominate the view. The diversity of habitats (woods, riparian, bluffs), clear water, and opportunities for solitude where only natural sounds can be heard, as well as the unobstructed views free from evidence of human encroachment are components of this value. The hardwood forest turns into a myriad of colors every fall. These combined landscape elements of diverse landforms (topography), vegetation, water, seasonal variations of color, and lack of human intrusions along most of the river segment make this value significant in the region.

Recreation: As one of the fastest falling rivers in the state of Iowa the opportunities for paddling (canoeing and kayaking) are outstanding. The high scenic quality and naturalness make sightseeing, wildlife observation, and photography significant recreational values in the river corridor. Visitors are attracted to the river from throughout the region of comparison and beyond. Motorized watercraft can be used up to 3 miles from the mouth depending on water levels. However this type of use is quite low.

Geology: The river valley showcases the ability of water to erode and dissolve the limestone bedrock to create the rugged terrain of northeast Iowa. During the Ice Ages, the area known as the "Driftless Zone" was left unscathed by the advance and retreat of the continental ice sheets for a million years. Although the area was not directly affected by glaciers, their melt waters carved out the Mississippi River Valley. The river valleys at the base of the bluffs used to be much deeper than what exists today, having been filled in with glacial debris and sediments over the millennia. The oldest layer exposed at the monument is the Jordan sandstone that was laid down during the Cambrian period. This layer is seen along the base of the east facing bluffs and is an important aquifer for the area. There is approximately 500 feet of vertical relief from the water surface at the mouth of the Yellow River (600 ft. above sea level) to the highest point in the Heritage Addition. Limestone/dolomite bluffs rise up to 300 feet above the river.

Fish: Fish species in the Yellow River probably include some or all of the 118 species known to occur in the Upper Mississippi River National Fish and Wildlife Refuge which is adjacent to the monument. A list provided by the U.S. Fish and Wildlife Service indicates that the most common species are gizzard shad, common carp, emerald shiner, river shiner, bullhead minnow, and bluegill. An Iowa state species of concern, the pugnose minnow, has been found near the Yellow River in the Heritage Addition (Natural Resource Commission 1999). Both the brook trout and grass pickerel, state listed species, have been found in Dousman Creek, a tributary to the Yellow River, but not in the Yellow River. Native freshwater mussels are also found in Dousman Creek and the Mississippi River but no live specimens have been found in the Yellow River. The river is not considered a nationally or regionally important producer of resident fish species nor does it provide unique habitat for rare species.

Wildlife: Most of the Yellow River corridor is in an area of the monument (the Heritage Addition) that is in or returning to a relatively natural condition. Thus, the river corridor provides exceptionally high quality habitat for wildlife, including federal and state listed threatened, endangered, or sensitive species. The Yellow River floodplain has been identified as one of 12 nesting sites and one of two multiple nesting sites of the red-shouldered hawk (a state listed endangered species) in Iowa. The river corridor also serves as a wildlife travel corridor because it connects two protected areas – Effigy Mounds National Monument and Yellow River State Forest. These wildlife and wildlife habitat values are increasingly rare in the region due to expanding development.

Historic: On the shores of the Yellow River are the ruins of a historic military sawmill, operated at one time by Jefferson Davis, and a lime quarry. The sawmill and quarry were established

primarily to provide lumber and lime mortar for the construction of Fort Crawford across the Mississippi in Wisconsin. The sawmill has been determined eligible for listing in the National Register of Historic Places. These resources are significant because they are reminders of how early nineteenth century American Indian treaties involved the military in resolving "the Indian problem" and opened up the territories for United States expansion and settlement prior to the Mexican War.

Cultural: Effigy Mounds National Monument contains one of the largest concentrations of burial mounds in the United States including some of the finest and best preserved examples of effigy mounds in their original forms. A number of the mounds that once existed in the Yellow River floodplain and open field areas were destroyed by early farming activities prior to establishment of the national monument. While the native cultures that created the mounds certainly used the Yellow River, the mounds are not directly river related. A habitation site (now called the FTD site) was discovered near the Yellow River's mouth.

The information presented above was compared to criteria established by the Interagency Wild and Scenic Rivers Coordinating Council to make the determinations shown in the following table.

Value	Outstandingly Remarkable?
Scenery	Yes
Recreation	Yes
Geology	Yes
Fish	No
Wildlife	Yes
History	Yes
Cultural	No. Not in river study corridor

Segment Classification
Each segment of a river recommended for designation must be classified as either *wild, scenic*, or *recreational* according to the following definitions from the act:

(1) Wild river areas—Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shoreline essentially primitive and waters unpolluted. These represent vestiges of primitive America.

(2) Scenic river areas—Those rivers or sections or rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

(3) Recreational river areas—Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Eligibility Finding and Tentative Classification

Based on the information above, the segment of the Yellow River being assessed is free of impoundments and possesses five outstandingly remarkable values. Therefore, the National Park Service determines that the Yellow River is *eligible* for possible inclusion into the Wild and Scenic River System. The study team determined that the appropriate tentative classification for the entire segment is "Scenic."

SUITABILITY ASSESSMENT

A typical boundary for a river study area is one-quarter mile (1,320 feet, 403 meters) from the river's ordinary high water line on both sides of the river up to a maximum of 320 acres per river mile according to the Act. The tentative boundary for the potential Yellow River W&SR would be defined by channel, ordinary high water mark or high bench, and may include terrestrial landscape areas necessary to protect the identified Outstandingly Remarkable Values within the boundaries of Effigy Mounds National Monument (a map illustrating one possible boundary based on the floodplain is attached). The final boundary would be established in a river management plan prepared after designation.

Suitability Criteria

In addition to the outstandingly remarkable values listed previously, the following factors (outlined in the Wild and Scenic Rivers Act) were analyzed for the Yellow River in determining whether or not the river segment is suitable for inclusion in the Wild and Scenic River System: the characteristics which do or do not make the area worthy addition to the system; current status of landownership and use in the area; reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the system; the extent to which administration would be shared with state and local agencies; the estimated cost of acquisition and administration; the ability of the National Park Service to manage the segment as a WSR and other potential protection mechanisms other than WSR status; and, any historical or existing rights which could be adversely affected. These criteria are addressed below as they apply to the 3.5-mile segment of the Yellow River.

Characteristics that make the area a worthy addition to the National Wild and Scenic River System. The segment identified in this assessment is in the "Driftless Area" of northeastern Iowa, western Wisconsin, southeast Minnesota, and the northwestern corner of Illinois. There are no other designated segments of the National Wild and Scenic Rivers System within the Driftless Area.

Existing water developments and rights held on the river are associated with livestock, crops, and domestic use. These uses and rights occur upstream of the monument and would not be affected by Wild and Scenic River designation as they would be senior to any rights acquired through designation. No action taken in the general management plan or the recommendation of this assessment can establish an appropriation or Federal reserve water right. An act of Congress designating a Wild and Scenic River may or may not establish a Federal reserve water right. If Congress creates a reserved right, the National Park Service and the state of Iowa may establish minimum instream flows necessary to meet the purposes of the designation.

The Yellow River corridor provides opportunities for recreational activities such as hiking, bird-watching, photography, nature study, and access to cultural sites. There are no good numbers for recreation use in the river area because of its remoteness. Effigy Mounds National Monument

receives almost 90,000 visitors each year. The use of motorboats is not prohibited but their use is limited by natural barriers to the first 3 miles or so from the Mississippi River.

Developed or semi-developed river access points are provided upstream of the monument on state forest land and at an IDNR site on the Mississippi River near the mouth of the Yellow River. To avoid the last mile of paddling before the IDNR takeout, some paddlers have been exiting the river at a small spot on the northern bank of the river where a "social" (unauthorized and not formally developed) landing spot near Highway 76. Exiting the river at this social landing saves about 20 minutes of paddling to the developed day use take-out area on the Mississippi River. Until 2000, this social take-out was outside of the boundaries of the monument. Today, the bank of the river is inside of the boundary, but according to the most recent boundary survey paddlers must cross private land to the point where they access their vehicles. The social takeout area is causing damage to the river's edge through erosion. It also presents a safety hazard both from boaters slipping as they exit their canoes in the soft, muddy bank and from their cars exiting the informal parking site onto a fast moving highway where it is difficult to see oncoming traffic. The GMP alternatives call for closing this take-out site and having paddlers go on downstream to the IDNR take-out.

Status of land ownership. The entire segment of this assessment traverses shores and river bottoms which are owned by the National Park Service. As a navigable river, the water column itself is state-owned. Law enforcement on the river is subject to concurrent jurisdiction. There are no incompatible uses.

Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the system. The segment under consideration is within the boundary of a national monument which is managed to preserve examples of Indian mound-building cultures, protect wildlife and the natural values, and provide for scientific study and appreciation. Upstream from this segment, another 3.8 miles of Yellow River also flows through publicly owned land of the Yellow River State Forest. The Yellow is one of the fastest falling rivers in the state and is known for providing excellent fishing and canoeing opportunities. There are no recreational uses which would be foreclosed or curtailed due to inclusion in the Wild and Scenic River System and its inclusion would enhance the use of this river by visitors.

A pedestrian bridge crosses the Yellow River near the eastern monument boundary. Just outside this boundary, about 500 feet downstream from the pedestrian bridge, a highway and a railroad bridge cross the river. These existing bridges have begun to erode the scenic value of the river. Any additional bridges across the river may further erode the remaining scenic value of the river. Therefore, impacts of the bridge to scenery, as well as to the other qualities that make the river eligible as a Wild and Scenic River. If a new bridge could not be built that would avoid these impacts, it would not be allowed.

Designation of this segment of the Yellow River would enhance its scenic, recreational, geological, wildlife, and historic values and preserve its free-flowing nature.

The extent to which administration would be shared with state and local agencies. This criterion does not apply to this situation because the segment of river under study is completely within the boundary of Effigy Mounds National Monument. It would be administered by the National Park Service.

Estimated cost of acquiring necessary lands, interests in lands, and administering the area if it is added to the National System. There would be no acquisition costs, since the segment under consideration flows through federal land managed by the National Park Service. There would be some administrative cost to the National Park Service to comply with section 7 of the Wild and Scenic Rivers Act (reviews of proposed projects that may affect the river), but this is not expected to be significant. There are no anticipated water resource projects at this point that would be expected to have direct and adverse effects on the values of this segment of the Yellow River.

Ability of the agency to manage and/or protect the river area or segment as a WSR, or other mechanisms (existing and potential) to protect identified values other than WSR designation The National Park Service currently works collaboratively with the State of Iowa and others to protect the Yellow River. Management of the river, should it be designated, is within the capability of the current monument and regional NPS staff. While there are other mechanisms to protect the values (such as NRI listing and preservation management prescription of the zone surrounding the river in the General Management Plan), WSR designation would strengthen the level of protection.

Historical or existing rights that could be adversely affected. Designation would not affect any existing or historic rights. No legal rights exist on the land surrounding this segment of the Yellow River that would irreparably harm the river's values. The Federal government may acquire water rights under state law but these water rights would be junior to existing rights.

Suitability Finding

Based on the information and analysis above, the 3.5-mile segment of the Yellow River that traverses Effigy Mounds National Monument is *suitable* for inclusion in the National Wild and Scenic River System with the tentative classification of "Scenic." Designation of this segment would provide long-term protection for the outstandingly remarkable river values identified in this assessment.

This study will be forwarded through the Department of the Interior to Congress with a recommendation for designation as a Wild and Scenic River. Final designation requires that Congress must pass, and the President must sign into law, a bill to authorize inclusion of a river into the National Wild and Scenic Rivers System.

Interim Management

Until Congressional action occurs on the NPS recommendation for the segment to be included as a part of the National Wild and Scenic Rivers System, it would be managed to protect the free-flowing characteristics, tentative classification, and outstandingly remarkable values. Environmental impact analysis (e.g., NEPA documentation) for future actions proposed in the river corridor would address potential impacts, and mitigation or alternatives would be applied to avoid adverse impacts to these values and characteristics.

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NOTES:
*The park is in the process of completing a boundary survey. The boundary shown on this map is for illustrative purposes only.

HERITAGE ADDITION

NORTH UNIT

SOUTH UNIT

Smokey Hollow Road

County Road (Restricted Use)

Yellow River

Dousman Creek

Founders Pond

76

Mississippi River

IOWA

WISCONSIN

Pleasant Ridge Road

0 0.5 1 Miles

SNY MAGILL UNIT

Johnsons Slough

X56

Sny Magill Creek

Entrance Road

0 0.25 0.5 Miles

Legend

- Public Road
- County Road
- State Boundary
- Possible Wild & Scenic River Boundary
- Waterbody
- National Monument Boundary
- Non-NPS Land within Park Boundary

Possible Wild and Scenic River Boundary

EFFIGY MOUNDS NATIONAL MONUMENT

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

DSC/March 2012

APPENDIX E: SPECIAL STATUS SPECIES KNOWN IN THE MONUMENT

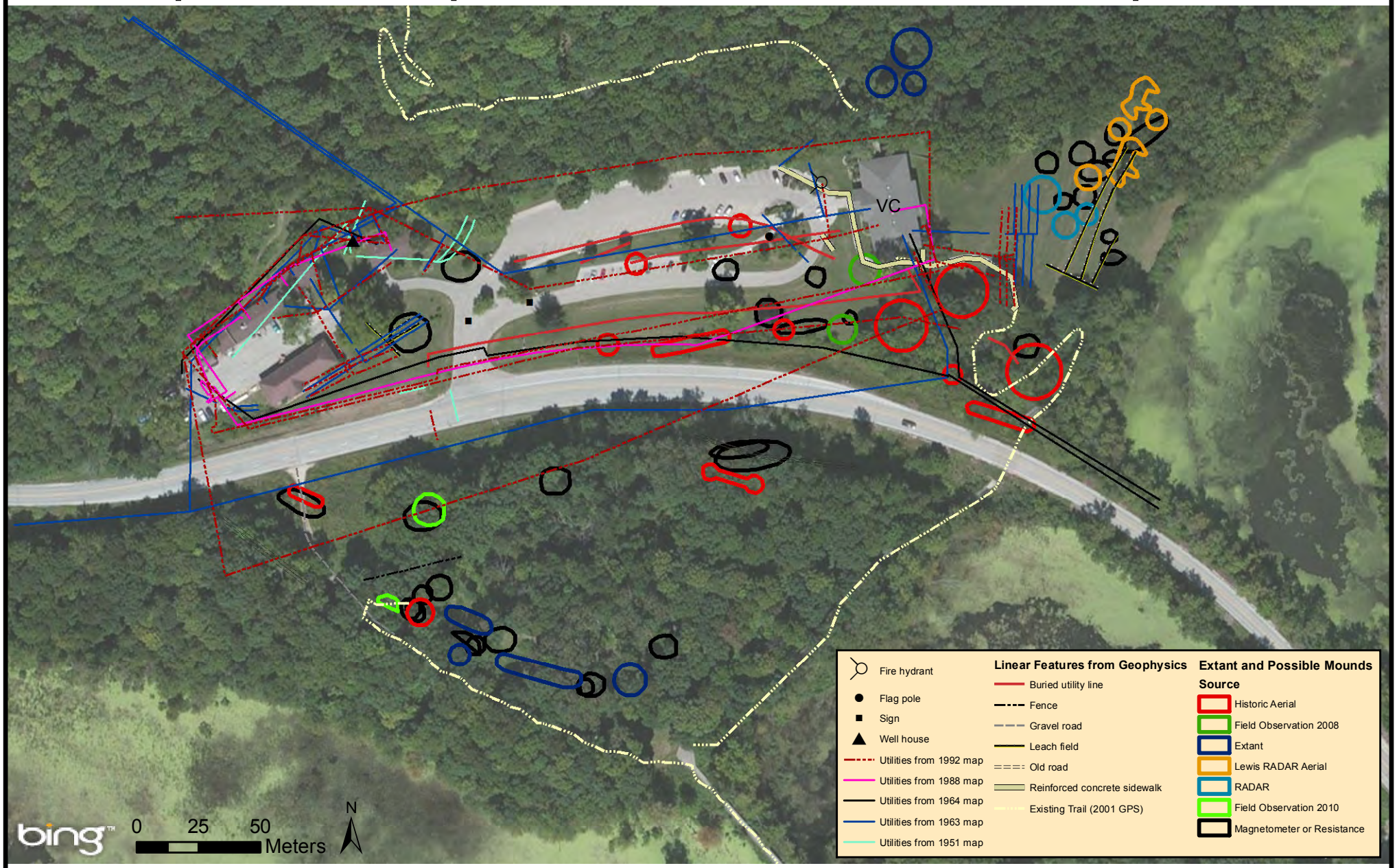
F-Federal; IA- Iowa; E-Endangered; T-Threatened

1. Higgins eye pearlymussel (*Lampsilis higginsii*) F-Endangered, IA-E
2. Bald eagle (*Halineetus leucocephalus*) F-Delisted, IA-E
3. Peregrine falcon (*Falco peregrines*) F-Delisted, IA-E
4. Gray wolf (*Canis lupus*) F-Delisted
5. Red-shouldered hawk (*Buteo lineatus*) IA-E
6. Bluff veritigo (*Veritigo merimecensis*) IA-E
7. Spectaclecase (*Cumberlandia monodonta*) IA-E
8. Slough sandshell (*Lampsilis teres teres*) IA-E
9. Yellow sandshell (*Lampsilis teres anodontoides*) IA-E
10. Purple cliff break (*Pellaea atropurpurea*) IA-E
11. Yellow-eyed grass (*Xyris torta*) IA-E
12. Leathery grapefern (*Botrychium multifidum*) IA-T
13. Jeweled shooting star (*Dodecatheon amethystinum*) IA-T
14. Creeping juniper (*Juniperus horizontalis*) IA-T
15. Wild lupine (*Lupinus perennis*) IA-T
16. Purple fringed orchid (*Platanthera psycodes*) IA-T
17. Slender ladies'-tresses (*Spiranthes lacera)* IA-T
18. Southern bog lemming (*Synaptomys cooperi*) IA-T
19. Grass pickerel (*Esox americanus*) IA-T
20. Central newt (*Notophthalmus veridescens*) IA-T
21. Strange floater (*Strophitus undulates*) IA-T
22. Hawthorn (*Crataegus pruinosa*) IA
23. Purple coneflower (*Echinacea purpurea*) IA
24. Prairie dock (*Silphium terebinthinaceum*) IA
25. Rough bedstraw (*Galium asprellum*) IA
26. Small white lady's slipper (*Cypripedium candidrum*) IA
27. Summer grape (*Vitis aestivalis*) IA
28. Southern flying squirrel (*Glaucomys volans*) IA
29. Great Plains ladies'-tresses (*Spiranthes magnicamporum*) IA
30. Spotted coralroot (*Corallorrhiza maculate*) IA
31. Needle-and-thread (*Stipa comata*) IA

APPENDIX F: KNOWN, PROBABLE, AND POSSIBLE MOUND LOCATIONS IN DEVELOPED AREA

See map on the following page.

Known, probable, and possible mound locations in developed area



Produced by Midwest Archeological Center, National Park Service

June 2012

FILE: efmo/ProjectFolders/2012/MndsDevelopedArea

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INDEX

A

American Indian, 5, 11, 12, 13, 15, 21, 23, 30, 64, 66, 71, 85, 90, 104, 106, 107, 118, 136, 138, 143, 144, 166, 168, 169, 171, 172, 174, 219, 220, 227, 265

D

Dousman Creek, 7, 27, 28, 45, 111, 264

E

Eagle Rock, 7, 116
endangered species, 5, 13, 18, 85, 86, 160, 219, 264

F

Fire Point, 7, 64, 78, 93, 96, 116, 118, 136, 137, 140, 141, 142
floodplain, 6, 7, 17, 18, 28, 30, 46, 108, 109, 110, 112, 113, 115, 264, 265, 266

H

Hanging Rock, 7, 116
Heritage Addition, ii, v, 5, 6, 7, 10, 22, 28, 43, 57, 63, 66, 71, 77, 78, 88, 90, 91, 92, 103, 107, 110, 116, 136, 138, 140, 141, 142, 150, 151, 155, 156, 158, 159, 161, 164, 165, 167, 168, 169, 170, 172, 173, 177, 178, 180, 181, 182, 189, 227, 264

I

infrastructure, 50, 130, 134, 135, 137, 149, 150, 151, 154, 155, 156, 180, 181, 182
interpretation, iii, 12, 16, 52, 57, 58, 59, 63, 66, 67, 68, 71, 72, 73, 78, 89, 90, 92, 93, 94, 95, 118, 120, 125, 135, 144, 145, 167, 168, 169, 170, 172, 173, 176, 178, 181, 182, 220

J

Jefferson Davis Sawmill, 11, 12, 103

N

North Unit, ii, 6, 7, 43, 57, 58, 63, 64, 66, 67, 71, 82, 93, 94, 107, 116, 118, 125, 130, 136, 137, 141, 164, 165, 167, 169, 172, 173, 180, 189

O

Orientation, 22, 167, 170, 173

P

parking, 7, 22, 46, 52, 58, 68, 86, 95, 116, 125, 136, 140, 167, 168, 169, 171, 174, 183, 267

S

Sny Magill Unit, ii, 5, 6, 7, 20, 22, 28, 29, 46, 55, 58, 64, 68, 72, 77, 78, 82, 89, 94, 95, 107, 110, 112, 115, 119, 122, 125, 130, 136, 138, 139, 140, 141, 142, 164, 165, 167, 168, 169, 170, 171, 172, 173, 177, 178
South Unit, ii, 6, 7, 44, 58, 64, 67, 68, 72, 77, 94, 103, 107, 118, 120, 122, 136, 150, 151, 155, 156, 159, 164, 165, 167, 168, 169, 170, 172, 173, 176

T

traffic, 29, 120, 133, 137, 139, 140, 267
trails, iii, iv, 7, 20, 27, 45, 46, 57, 58, 63, 64, 66, 67, 68, 72, 77, 78, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 116, 118, 119, 120, 130, 133, 135, 136, 137, 139, 140, 141, 142, 150, 151, 155, 156, 158, 159, 160, 164, 165, 168, 169, 176, 178, 265

Y

Yellow River Wild and Scenic River Assessment, 261

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

EFMO 394/119437A February 2013

Effigy Mounds National Monument

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