

Chapter 1. Introduction

Introduction

1 This document presents the Cultural
2 Landscape Report and Environmental
3 Assessment (CLR / EA) for Hopewell Culture
4 National Historical Park (NHP) in south-
5 central Ohio, a network of six archeological
6 earthwork complexes built by the American
7 Indian Hopewell people, whose civilization
8 flourished from circa AD 1 to AD 400. The
9 six park units — Mound City Group, Hopeton
10 Earthworks, Hopewell Mound Group, Seip
11 Earthworks, High Bank Works, and Spruce
12 Hill — represent some of the finest examples
13 of Hopewellian resources.^{1.1}

14
15 This CLR / EA presents detailed
16 documentation of Hopewell Culture NHP's
17 historical development, evaluation of
18 existing condition, analysis of landscape
19 characteristics, determination of contributing
20 features, and treatment recommendations.

21
22 This CLR / EA builds upon the numerous
23 studies, investigations, and documents
24 that exist for the Hopewell Culture NHP
25 (the park) and its discontinuous parcels.
26 These documents include the 1997 General
27 Management Plan (GMP); the 2014 Cultural
28 Landscape Inventories (CLI) for Mound
29 City Group, Hopeton Earthworks, and
30 Hopewell Mound Group; the 1997 Long
31 Range Interpretive Plan (LRIP); the 1999
32 Administrative History; and various natural
33 resource reports.

34
35 Numerous archeological investigations have
36 been undertaken for the park, beginning with
37 research and mapping by Ephraim G. Squier
38 and Edwin H. Davis in the 1840s, the work
39 of Warren Moorehead in the 1890s, and the
40 work of William Mills and Henry Shetrone of
41 the Ohio Historical Society in the 1920s.

42
43 1.1 Spruce Hill is included in the park's legislated boundary,
44 but is co-managed with a non-NPS entity, the Arc of
Appalachia. A separate appendix has been prepared for
this park unit.

1 More recent studies include those undertaken
2 by the National Park Service (NPS),
3 particularly the NPS Midwest Archeological
4 Center (MWAC) and researchers affiliated
5 with academic institutions.

6
7 Seven Hopewellian archeological complexes
8 were included on the United States Tentative
9 List in 2008 for possible nomination to the
10 UNESCO World Heritage List as 'Hopewell
11 Ceremonial Earthworks.' This includes
12 Hopewell Culture NHP and two Hopewell
13 earthwork complexes (Newark Earthworks
14 State Memorial and Fort Ancient State
15 Memorial) owned and managed by Ohio
16 History Connection (OHC).

17
18 This CLR / EA is the primary document used
19 to guide management and stewardship of
20 Hopewell Culture NHP. The intent of the
21 CLR / EA is to provide a comprehensive
22 and integrated guidance document that
23 reflects the mission of the NPS, and ensures
24 long-term preservation, stewardship, and
25 visitor experience objectives are met to the
26 maximum extent practicable.

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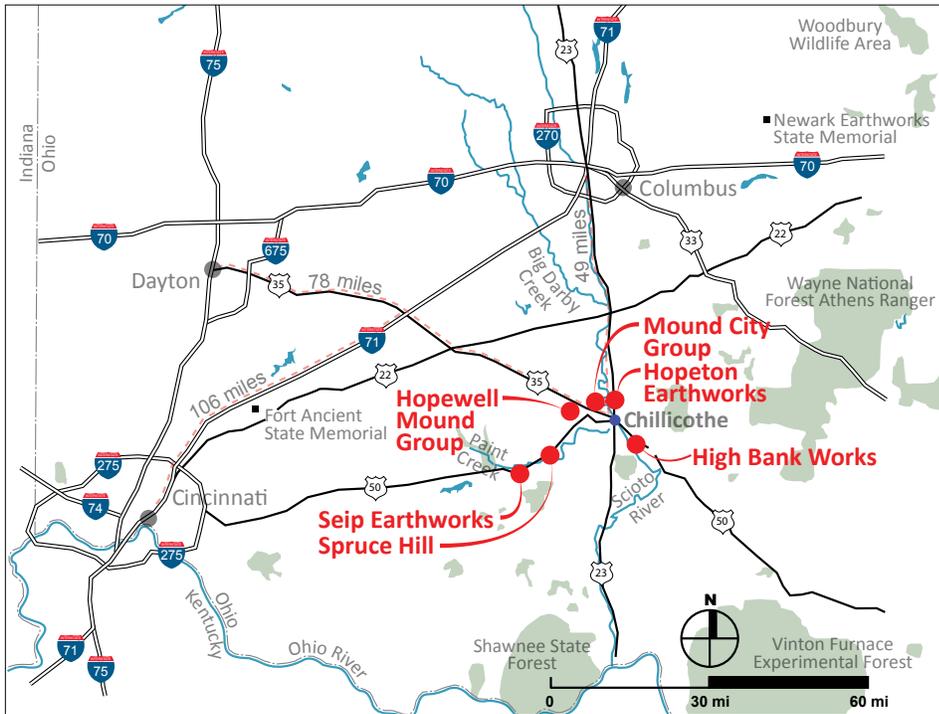


Figure 3-1. Hopewell Culture NHP is in south-central Ohio within the Scioto River valley. (Mundus Bishop 2014)

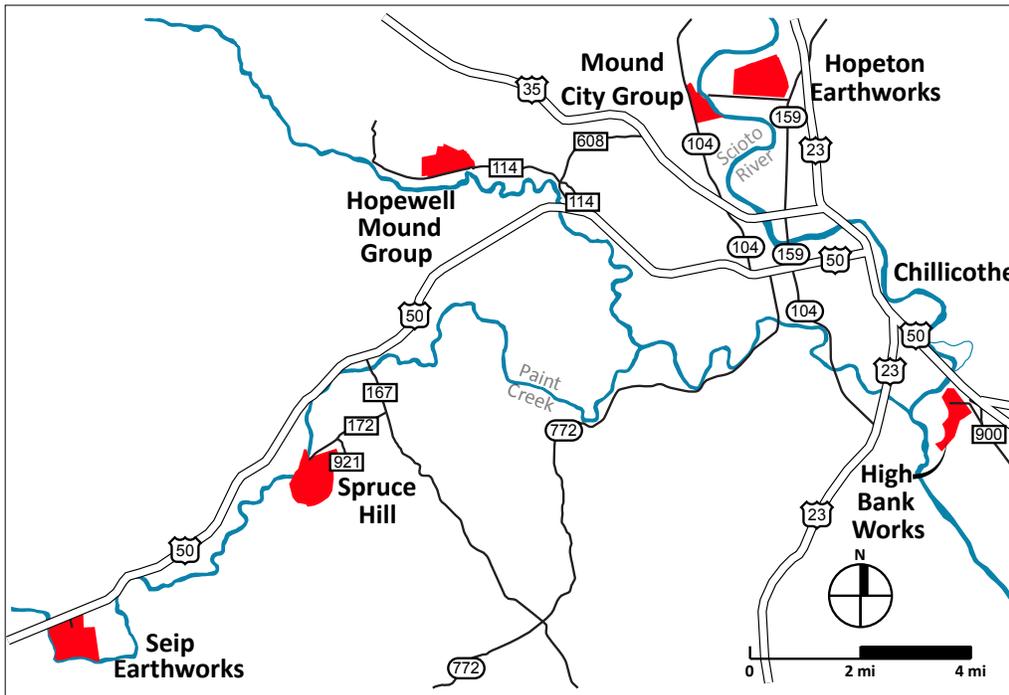


Figure 3-2. The park has six discontinuous park units, each with a unique set of archeological earthworks. Mound City Group is located north of Chillicothe, Ohio, on the west bank of the Scioto River; Hopeton Earthworks is located immediately across the river to the east. Hopewell Mound Group is located adjacent to North Fork Paint Creek, to the west of the other park units; Spruce Hill is on the north bank of Paint Creek; and Seip Earthworks is located the furthest west, on the north bank of Paint Creek. High Bank Works is south of Chillicothe, Ohio, on the east bank above the Scioto River. (Mundus Bishop 2014)

Study Area and Park Units

1 The park is located near Chillicothe within
2 Ross County in south central Ohio. It is
3 approximately 45 miles south of Columbus
4 and 100 miles east of Cincinnati. The study
5 area is 1,828 acres in size, consists of six
6 discontinuous park units, connected by state
7 and federal highways. Traveling distances
8 extend as far as 15 miles between park units.
9

10 Hopewell Culture NHP is situated in the
11 Scioto River Valley, at the western edge of
12 the Appalachian foothills. The landscape is
13 topographically rugged, and filled with heavy
14 tree cover. Its diverse natural environment
15 is a combination of woodlands, shrublands,
16 riparian areas, native grasslands, hay fields,
17 and former and current crop fields.
18

19 Many Hopewellian earthwork complexes
20 are within Ross County. Efforts to protect
21 these earthwork complexes date to the turn
22 of the twentieth century, when Mound City
23 Group (129 acres) was established in 1923
24 as a National Monument. In 1992, three
25 additional parcels—Hopeton Earthworks
26 (308 acres), Hopewell Mound Group (312
27 acres), Seip Earthworks (167 acres), High
28 Bank Works (170 acres)—were added
29 creating Hopewell Culture NHP.^{1,2} Spruce Hill
30 (150 acres) was added in 2009. Additional
31 lands of Seip Earthworks (120 acres) were
32 transferred to the park in 2014. Each park
33 unit is characterized by monumental-
34 scaled, Hopewellian built earthworks set
35 in relationship to both a river course (near
36 the Scioto River, Paint Creek, or the North
37 Fork Paint Creek), and to the surrounding
38 mountains and hillsides.
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41 1.2 Ron Cockrell. *Amidst Ancient Monuments, Administrative*
42 *History / Hopewell Culture National Historical Park Ohio*.
43 Omaha: U.S. Department of Interior, NPS, Division of
44 Cultural Resources, Midwest Support Office, 1999. NPS,
Hopewell NHP Foundation Document, in preparation.

1 The network of archeological complexes
2 are connected by their shared function as
3 ritual, ceremonial and burial places, and
4 their known construction by the Hopewell
5 people. Together, they create the significant
6 archeological landscape of the park,
7 representative of thousands of earthworks
8 originally built by the Hopewell Culture,
9 including many other extant earthwork
10 complexes in the surrounding region. The
11 park units are part of a broad network of
12 archeologically important economic, political,
13 and spiritual beliefs, and practices of the
14 Hopewell Culture.
15

16 Hopewell Culture NHP's national significance
17 is recognized by its listing in the National
18 Register of Historic Places (NHRP): Mound
19 City Group NRHP 1978; Hopeton Earthworks
20 NRHP 1975; Hopewell Mound Group NRHP
21 1974; Seip Earthworks NRHP 1971; High
22 Bank Works NRHP 1973; and Spruce Hill
23 NRHP 1972, and by the designation of
24 Hopeton Earthworks (1964) as a National
25 Historic Landmark (NHL). The period
26 of significance is AD 1 to AD 400, which
27 recognizes the active use of the region by
28 the Hopewell Culture and the building of
29 the ceremonial earthwork complexes. A
30 broader, secondary period of significance
31 extends from AD 400 to AD 1650, to include
32 the contributions and occupations of later
33 groups of American Indians. Other potentially
34 significant resources from later periods are
35 within the study area but are not significant
36 to the Hopewell Culture.
37

38 Mound City Group, Hopewell Mound Group,
39 and Seip Earthworks are open to the public,
40 with facilities that include roads, trails,
41 shelters, restrooms, and signage to guide
42 visitors. Hopeton Earthworks and High Bank
43 Works have no visitor facilities, and are not
44 currently open to the public.

1 **Mound City Group**

2 Mound City Group is north of Chillicothe, Ohio
3 on a 120-acre park unit, on the west side of
4 the Scioto River, and east of State Highway
5 104. Mound City Group consists of at least
6 25 mounds, an earthen wall, and borrow pits
7 located outside the earthen wall.

8
9 In the 1920s Mound City Group was
10 preserved and reconstructed through the
11 efforts of grassroots organizers and the
12 Ohio State Archaeological and Historical
13 Society. It became Mound City Group
14 National Monument in 1923, and came
15 under the direction of the NPS in the 1940s.
16 Reconstruction of the perimeter earthen wall
17 and 23 mounds was completed in 1927. The
18 reconstructed walls and mounds reflect the
19 scale and spatial qualities of the earthwork
20 complex, suggesting how it may have looked
21 during use by the Hopewell Culture. The land
22 is relatively flat, the mounds and earthworks
23 are covered with mown lawn, and are
24 surrounded by wooded areas on the north,
25 south, and east sides. A steep bank descends
26 on the east side of the park unit, to the Scioto
27 River.

28
29 The park headquarters and primary visitor
30 facilities are immediately adjacent to Mound
31 City Group. Facilities include a visitor center,
32 administrative buildings, maintenance
33 facilities, a picnic area, and nature trail in
34 addition to the mounds and earthworks.

35 **Hopeton Earthworks**

36 Hopeton Earthworks is about one mile east
37 of Mound City Group, on a terrace east of
38 the Scioto River, and west of U.S. Highway
39 23. The park unit is fairly flat and open, with
40 some elevation gain eastward from the river.
41 A hardwood forest and an intermittent creek
42 is at the southeast corner of the park unit.
43 Much of the land was formerly in agricultural
44 production, but is now fallow. A gravel mining
45 operation is adjacent to the park unit on the
46 west.

1 Hopeton Earthworks is 308 acres. The
2 earthworks include a great circle enclosure,
3 formed by earthen walls, enclosing 20
4 acres; a conjoined rectangular enclosure
5 encompassing 20 acres, made of earthen
6 walls with rounded corners; three other
7 circular enclosures; and parallel walls that
8 extend from the northwest corner of the
9 rectangular enclosure towards the Scioto
10 River.^{1.3} Two gravel roads bisect Hopeton
11 Earthworks, one extends north south, and the
12 other is east west passing through the middle
13 of the square enclosure.

14
15 Since site documentation was completed in
16 October 2014, a parking lot at Hopetown
17 Road and trail between the parking lot and
18 overlook have been designed through a
19 separate project.

20 **Hopewell Mound Group**

21 Hopewell Mound Group is on the North Fork
22 Paint Creek, five miles southwest of Mound
23 City Group. Historically much of the land was
24 in agricultural production, but is now fallow
25 or cut for hay. A hardwood forest is at the
26 north edge of the park unit.

27
28
29 In 1980 Hopewell Mound Group was
30 purchased and preserved by the Archeological
31 Conservancy. In 1992 it became one of six
32 complexes established as Hopewell Culture
33 NHP.

34
35 The general shape of the monumental
36 Hopewell Mound Group earthworks is a
37 parallelogram; archeologists estimate that the
38 walls enclose an area of 111 acres.^{1.4} A smaller
39 square enclosure connects to the east side of
40 the parallelogram. Remnants of the east, west,
41 and north walls are visible. Two earthwork
42 features occur within the parallelogram, one

44 1.3 "Great Circle Enclosure - Hopeton Earthworks," *List of*
45 *Classified Structures, Ohio, Hopewell Culture National*
46 *Historical Park (OH)*. <http://www.hscl.cr.nps.gov>
(accessed October 2014).

1.4 *Cultural Landscapes Inventory, Hopewell Mound Group,*
Hopewell Culture National Historical Park. (NPS, 2014), 3.

1 circular and one D-shaped, and evidence of at
2 least 30 mounds. One mound, Mound 25, is
3 the largest known mound constructed by the
4 Hopewell Culture.^{1.5}

5
6 A small square parcel of privately owned
7 land occurs within the park unit on the
8 southern boundary. The eastern side of the
9 property contains a visitor parking area and
10 restroom facilities. An abandoned railroad
11 track, now a bicycle trail, extends through
12 the southern portion of the Hopewell Mound
13 Group. County Road 114 extends through the
14 southern portion of the earthwork complex,
15 and a 138kv AEP power-line bisects the
16 earthwork complex. The NPS is working with
17 the power company to consider options for
18 reducing visibility of this facility within the
19 Hopewell Mound Group.

20 21 **Seip Earthworks**

22 Seip Earthworks is 16 miles southwest of
23 Mound City Group, on the north bank of Paint
24 Creek, adjacent to U.S. Highway 50. The park
25 unit is fairly open, with vegetation becoming
26 more dense at the creek's edge. Visitor
27 parking and a picnic area are on the north
28 edge of the park unit.

29
30 In 1927 an approximately 10 acre tract,
31 including the Seip-Pricer Mound, was
32 designated 'Seip Mound State Memorial'.
33 However, the memorial did not include the
34 entire earthwork complex, and portions of the
35 earthworks remained in private ownership.
36 Today, the NPS owns the entire earthwork
37 complex except for three parcels of land still
38 in private ownership.

39
40 Seip Earthworks is a large complex of 236
41 acres. Earthworks include two miles of
42 earthen walls enclosing over 120 acres in the
43 shape of two immense circles, and a precise
44 square with astronomical alignments. Two
45 prominent mounds, the Seip-Conjoined
46 Mound, and the Seip-Pricer Mound are in

1 the center of Seip Earthwork's great circle
2 enclosure. The Seip-Pricer Mound is an
3 enormous reconstructed mound that is the
4 third largest burial mound the Hopewell are
5 known to have built.^{1.6}

6 7 **High Bank Works**

8 High Bank Works is south of Chillicothe, Ohio,
9 along an upper terrace of the east bank of
10 the Scioto River. It is west of U.S. Highway
11 35, with a railroad extending north south, at
12 the park unit's eastern edge. Due to safety
13 concerns regarding the railroad crossing, this
14 park unit is not accessible to visitors. Most
15 of the land is cleared, with mown hay on the
16 north and a native grasslands ecosystem to
17 the south. A native, hardwood forest thrives
18 along the river bank, and provides valuable
19 habitat along the river's riparian edge.

20
21 The main earthwork complex is a conjoined
22 circle and octagon, each enclosing about 20
23 acres. The octagon has eight small mounds
24 corresponding to openings or gateways in
25 earthen walls. The circle has one gateway
26 facing east toward a small circular enclosure
27 and ditch earthwork. A series of borrow pits
28 surround the octagon. Additional circular
29 enclosures and linear walls are located to
30 the southwest of the octagon. The NPS has
31 acquired all but two parcels of the earthwork,
32 which remain in private ownership.

33 34 **Spruce Hill**

35 Spruce Hill Preserve is a 150-acre
36 archeological complex west of Chillicothe,
37 sited on top of a flat-topped mesa that
38 juts above Paint Creek Valley. Spruce Hill's
39 archeological features consist of a series of
40 stone walls that enclose the level mesa of the
41 hill, and circumscribe the top of the bluff.

42
43 Spruce Hill is within the park's legislated
44 boundary and is co-managed with the Arc of

45
46 1.6 NPS, Seip Earthworks Site Bulletin (Hopewell Culture
47 NHP brochure, 2010).

1.5 *General Management Plan, Hopewell Culture National
Historical Park, Ohio, (NPS, 1997).*



Figure 3-3. Mound City Group is north of Chillicothe, Ohio on a 120-acre park unit, on the west side of the Scioto River. (Mundus Bishop 2014)



Figure 3-4. Hopeton Earthworks is about one mile east of Mound City Group, on a terrace east of the Scioto River. (Mundus Bishop 2014)



Figure 3-5. Hopewell Mound Group is on the North Fork Paint Creek, five miles southwest of Mound City Group. (Mundus Bishop 2014)



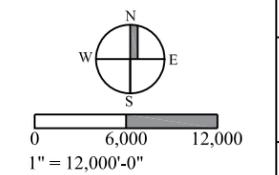
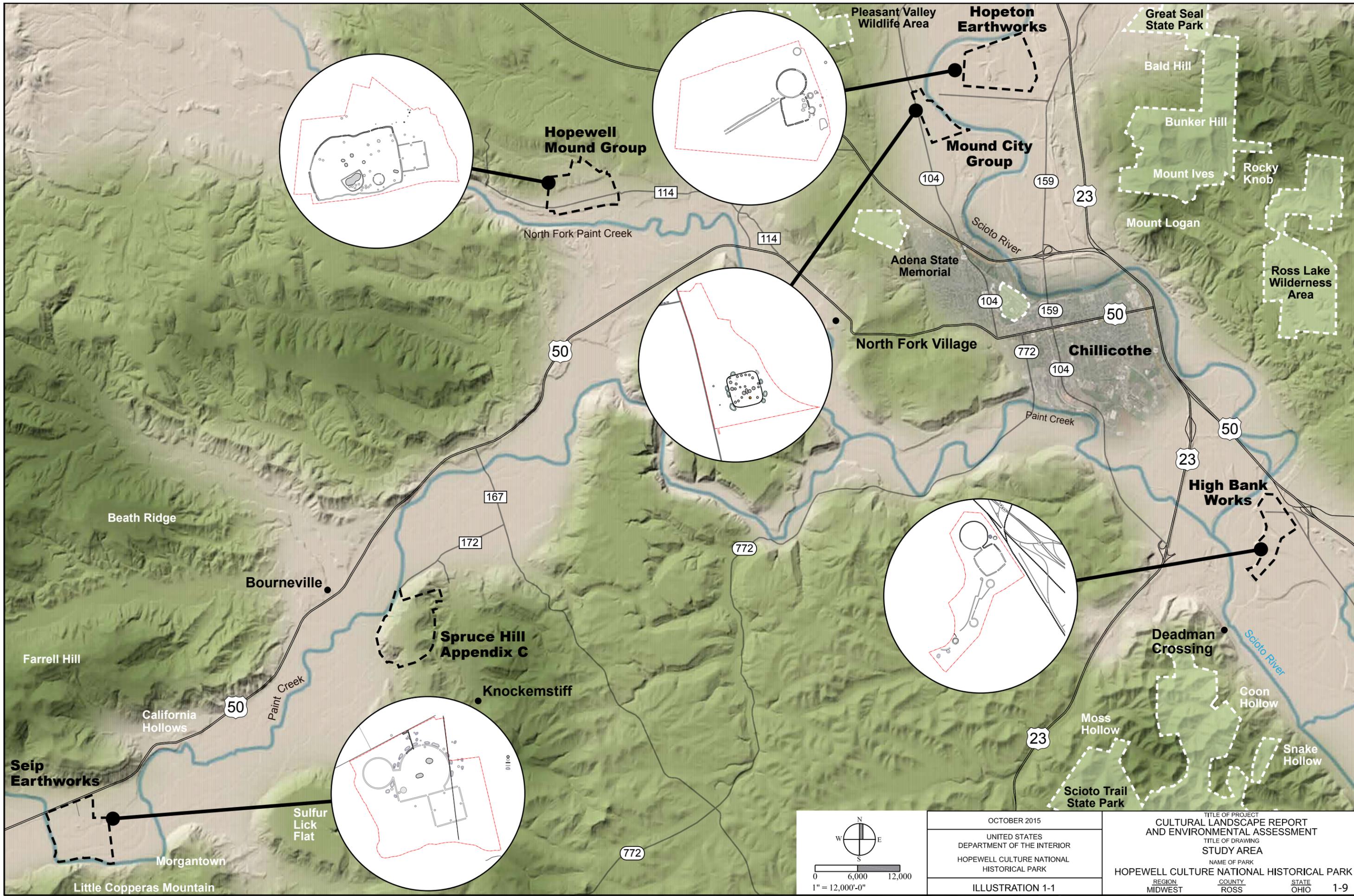
Figure 3-6. Seip Earthworks is 16 miles southwest of Mound City Group, on the northern bank of Paint Creek. (Mundus Bishop 2014)

1 Appalachia. Since the park does not own the
2 property and has no management authority,
3 it is not included in the environmental
4 assessment or detailed analysis and
5 treatment recommendations. A separate
6 appendix is provided for Spruce Hill, which
7 includes an abbreviated CLR with general
8 recommendations for the treatment of this
9 archeological landscape.

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Figure 3-7. High Bank Works is south of Chillicothe, Ohio, along an upper terrace of the east bank of the Scioto River. (Mundus Bishop 2014)



OCTOBER 2015
 UNITED STATES
 DEPARTMENT OF THE INTERIOR
 HOPEWELL CULTURE NATIONAL
 HISTORICAL PARK
 ILLUSTRATION 1-1

TITLE OF PROJECT
 CULTURAL LANDSCAPE REPORT
 AND ENVIRONMENTAL ASSESSMENT
 TITLE OF DRAWING
 STUDY AREA
 NAME OF PARK
 HOPEWELL CULTURE NATIONAL HISTORICAL PARK
 REGION COUNTY STATE
 MIDWEST ROSS OHIO 1-9

Project Purpose and Need

1 Project Purpose

2 The purpose of this CLR / EA is to provide
3 guidance for managing landscape resources
4 within Hopewell Culture NHP. This project
5 will define a treatment strategy that will
6 reinforce the mission and significance of
7 the park. The strategy will focus on long-
8 term resource protection, sustainable cyclic
9 maintenance, and visitor understanding and
10 enjoyment.

11
12 This CLR / EA will document the site history
13 from prehistory to the present (including
14 recent NPS landscape treatments), determine
15 ongoing impacts on the landscape, evaluate
16 existing conditions, and develop treatment
17 alternatives that meet the resource protection
18 and visitor experience goals outlined in the
19 park's GMP.

20
21 This project will guide the long-term
22 stewardship of Hopewell Culture NHP
23 for the enjoyment of current visitors and
24 future generations by improving cultural
25 and archeological resource protection,
26 and providing a cohesive, unified visitor
27 experience. The treatment guidelines will
28 address appropriate modifications to existing
29 and proposed visitor facilities such as
30 overlooks, trails, and parking areas.

31
32 The treatment approach will address
33 alternatives for mound / earthwork
34 rehabilitation, stability, and identify
35 methods for enhancing visibility of degraded
36 earthworks. The plan will also establish
37 a maintenance program that the park can
38 sustain over time.

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1 Project Need

2 This proposed CLR / EA addresses the need
3 to preserve the park's historically significant
4 archeological landscape. The project is
5 needed to generate baseline documentation,
6 supplement existing historical and natural
7 resource data, provide recommendations
8 for future study, and provide guidance for
9 treatment and resource protection.

10
11 The proposed project is needed to document
12 the changes to the archeological landscape
13 that have occurred over time, to transfer
14 knowledge, and to provide holistic and
15 integrated guidance for the long-term
16 preservation and stewardship of the
17 archeological landscape. The project is also
18 needed to connect archeological landscape
19 maintenance to other resource management
20 plans and projects.

21
22 Finally, this project is needed to provide
23 baseline documentation and management
24 planning to support the potential nomination
25 of Hopewell Ceremonial Earthworks to the
26 UNESCO World Heritage List.

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Project Goals

- 1 The CLR / EA identifies landscape
2 characteristics and features that convey the
3 historical significance of the archeological
4 landscape, and provides holistic, integrated
5 guidance for long-term preservation and
6 stewardship for park units.^{1.7} This CLR / EA
7 addresses the following goals.
8
- 9 • Document the pre-contact history, historic
10 activity, and current physical conditions at
11 Hopewell Culture NHP.
12
 - 13 • Document resource threats and ensuing
14 impacts, e.g., invasive plants and
15 animals, erosion, maintenance practices,
16 agricultural activity, utility lines, non-
17 compatible intrusions, and others.
18
 - 19 • Evaluate management practices that may
20 provide income for sustaining vegetation
21 management programs.
22
 - 23 • Investigate mowing and other methods
24 for increasing earthwork visibility.
25 Address Best Management Practices for
26 Earthen Architecture demonstrated by
27 these and other earthwork complexes.
28 Define the appropriateness of protective
29 buffers at park units.
30
 - 31 • Consult with federally recognized
32 American Indian tribes, other federal and
33 state agencies, and cultural, archeological,
34 and natural resource experts to determine
35

36 1.7 The necessity of a CLR / EA for Hopewell Culture NHP
37 is mandated under the directives of the NPS Director's
38 Order 28: Cultural Resource Management (DO 28).
39 According to both federal law and NPS Management
40 Policies, historic landscapes in which the NPS has a legal
41 interest are to be managed as cultural resources, and
42 every landscape feature is to receive full consideration
43 for its historical values whenever a decision is made that
44 might affect its integrity. Chapter 7 of DO 28 deals with
the Management of Cultural Landscapes, and identifies
a Cultural Landscape Report as the primary guide to
treatment and use of a cultural landscape.

- 1 a desired landscape condition and provide
2 guidance on achieving desired condition
3 through physical treatment and long-term
4 maintenance.
5
- 6 • Explore concepts for how the NPS can
7 protect resources and provide a cohesive,
8 unified visitor experience with the goal
9 for having this information transferable to
10 other archeological landscape managers.
11
 - 12 • In accordance with draft 2014 Foundation
13 Document, establish clear management
14 priorities for the archeological landscape.
15
 - 16 • Provide a synthesis / summary of other
17 earthwork management approaches in
18 the U.S. and abroad.
19
 - 20 • Evaluate guidance from the Stubbendiek
21 report in light of issues other than
22 mechanical impacts from roots; consider
23 potential alterations of soil color,
24 chemistry, and soil formation processes.^{1.8}
25
 - 26 • Address issues raised as part of the World
27 Heritage Site nomination process—
28 buffers, intrusions, visibility, and
29 viewshed management.
30
 - 31 • Identify opportunities for accommodating
32 universal access while avoiding adverse
33 archeological resource impacts.
34
 - 35 • Supplement existing GIS database for
36 archeological resources by providing
37 layers to represent “Management Zoning”
38 (as defined in the GMP), “Treatment
39 Recommendations,” and “Desired
40 Vegetation Management Regimes.”
41

42 1.8 James Stubbendiek and Cheryl D. Dunn. *Hopewell Culture
43 National Historical Park: Review of the Literature on
44 the Influence of Roots on Archeological Features and
Vegetation Restoration Recommendations*. Lincoln:
University of Nebraska, 2011.

- 1 • Coordinate archeological landscape
2 condition assessment with the service-
3 wide initiative to list nationally significant
4 landscapes in the Facility Management
5 Software System (FMSS). Asset and
6 location data for Hopewell Culture NHP
7 would fall under “Maintained Landscape”
8 or “Maintained Archeological Site.”
9

10 Methodology

11
12 The CLR / EA is conducted at a thorough
13 level of investigation for historical research,
14 existing condition assessment, landscape
15 analysis, and treatment recommendations.
16 The thorough level research methodology,
17 as defined by the NPS, focuses on the use
18 of select documentation of known and
19 presumed relevance, including primary and
20 secondary sources that are easily available.
21
22 The existing condition investigation was
23 conducted according to best practices. A
24 review of readily available documentation
25 was undertaken, including information from
26 Hopewell Culture NHP, the National Park
27 Service’s Midwest Regional Office (MWRO),
28 and the National Park Service’s Midwest
29 Archeological Center (MWAC).
30
31 This review included planning documents,
32 administrative reports, technical reports,
33 natural resource studies, and correspondence.
34 Review of historical documentation included
35 archeological reports, historic drawings,
36 photographs, and correspondence available
37 from primary and secondary sources.
38
39 Background information provided by the
40 park as a GIS database was used to prepare
41 the CLR / EA drawings. Site investigations
42 in October 2014 documented existing
43 conditions. Archeological research focused
44 on review of previous archeological studies

1 and investigations, including those completed
2 prior to the establishment of the park. The
3 CLR / EA did not include any additional
4 archeological investigations.
5

6 This CLR / EA has been prepared in
7 compliance with the National Environmental
8 Policy Act (NEPA) of 1969, and implementing
9 regulations: 40 CFR Parts 1500-1508 and NPS
10 Director’s Order (DO) – 12 and Handbook,
11 Conservation Planning, Environmental Impact
12 Analysis, and Decision-making. In addition,
13 this CLR / EA was prepared in compliance
14 with the requirements of Section 106 of the
15 National Historic Preservation Act (NHPA),
16 in accordance with the Advisory Council on
17 Historic Preservation’s (ACHP) regulations
18 implementing section 106 (36 CFR Part
19 800.8, Coordination with the National
20 Environmental Policy Act).
21

22 Park Purpose and Significance

23
24 Hopewell Culture NHP was established
25 to protect the archeological features
26 and artifacts of a dynamic social and
27 ceremonial phenomenon that flourished in
28 the woodlands of eastern North America
29 long before Europeans first landed on this
30 continent. The park protects and interprets
31 the Hopewell archeological landscape and
32 provides access and facilities for the care and
33 accommodation of visitors.^{1.9}
34

35 The park’s archeological landscape represents
36 some of the finest examples of Hopewellian
37 resources. The monumental architecture
38 and artifacts of the park reflect a pinnacle of
39 achievement in the fields of art, astronomy,
40 mathematics, and engineering.
41

42 The Hopewell Culture represents an
43 important cultural development, and “it is

1.9 GMP, 5.

1 clear they had a stable society, capable of
2 major efforts to build earthworks, as well as
3 establishing their network of contacts with
4 other peoples.”^{1.10}

5
6 They produced sculptures of stunning grace,
7 skill and beauty, and had a complex spiritual
8 and ritual life.^{1.11}

9
10 The Hopewell Culture NHP is significant due
11 to these factors:

- 12
13 • The park is the only federal area that
14 preserves and interprets remnants of the
15 Hopewell Culture, a culture (including
16 regional settlement patterns, rituals, and
17 trade routes) that was distinctive and
18 widespread for 400 years.
- 19
20 • The park represents the most elaborate
21 earthwork complexes of the Hopewell
22 Culture, evidenced by large geometric
23 enclosures, unique to the Scioto River
24 area, as well as the largest and densest
25 concentrations of Hopewellian earthwork
26 complexes in the country.
- 27
28 • The monumental earthwork complexes
29 are repeated across a large area, built to a
30 similar scale and incorporating a similar
31 series of astronomical alignments.
- 32
33 • The park units were among the first
34 places in North America where the
35 practice of scientific archeology was used,
36 and among the first described in scientific
37 publications.
- 38
39 • The park contains Hopewell Mound
40 Group which is the ‘type-site’ for the
41 Hopewell Culture. A type-site means that
42 it is the location where the Hopewell

44 1.10 *General Management Plan. Hopewell Culture National*
45 *Historical Park, Ohio. (NPS, 1997), 3.*

46 1.11 *Hopewell Culture National Historical Park, Long-Range*
Interpretive Plan (NPS, 1997), 15.

1 Culture was first defined by archeologists
2 and gives the culture its name.

- 3
4 • The park contains Hopewell resources
5 with tremendous potential for directed
6 research and further investigation
7 to answer many questions about the
8 Hopewell Culture.
- 9
10 • The park preserves some of the general
11 physical environment in which the
12 Hopewell peoples lived.
- 13
14 • The park preserves some of the most
15 spectacular Hopewellian achievements.
16 The biggest Hopewellian conjoined
17 mound is located at Hopewell Mound
18 Group, the largest concentration of
19 mounds within an enclosure occurs at
20 Mound City Group, and one of two known
21 extant octagonal structures occurs at High
22 Bank Works.
- 23
24 • The Hopewell Ceremonial Earthworks
25 in Ohio were the focal center of an
26 influential network of interaction
27 that linked together distinct societies
28 scattered across half a continent.
- 29
30 • Associated ritual deposits contain
31 exceptionally finely crafted objects
32 fashioned from exotic raw materials
33 obtained from distant parts of North
34 America: copper from the Great Lakes,
35 mica from the Appalachians, marine
36 shell from the Gulf of Mexico, and even
37 obsidian from the Rocky Mountains.
- 38
39 • The earthwork complexes were settings
40 for ceremonies, sacred rituals and
41 festivals that brought together peoples
42 living in small dispersed settlements, and
43 may have drawn pilgrims bearing exotic
44 gifts from hundreds of miles away.

1 Mound City Group

2 Mound City Group is significant for its
3 numerous ceremonial and burial mounds,
4 and is the only fully restored Hopewellian
5 earthwork complex. Mound City Group played
6 an important role as a mortuary precinct.
7 Mounds were built over the remains of a
8 wooden building once used for funerary
9 rites and other ceremonial activities. Mound
10 City Group's importance was nationally
11 recognized in 1923, when President Warren
12 G. Harding established the Mound City Group
13 National Monument. It was entered into the
14 National Register of Historic Places (NRHP)
15 on February 17, 1978.

16

17 Hopeton Earthworks

18 Hopeton Earthworks is significant as one
19 of the finest and best preserved examples
20 of a monumental Hopewellian geometric
21 earthwork complex. It contains a rich
22 archeological record of domestic habitations
23 and specialized activity areas that help
24 to place the construction and use of the
25 earthworks in broader cultural context.
26 Hopeton Earthworks includes large earthen
27 walls, but no associated mounds or mortuary
28 features. Mound City Group and Hopeton
29 Earthworks likely served complementary
30 roles in the ritual life of a single community.
31 Hopeton Earthworks' importance was
32 nationally recognized in 1964, when it was
33 designated as a National Historic Landmark
34 (NHL). It was entered into the NRHP on July 2,
35 1975.

36

37 Hopewell Mound Group

38 Hopewell Mound Group is the largest
39 Hopewell earthwork complex and has
40 provided the greatest set in quality and
41 quantity of artistic Hopewell artifacts ever
42 discovered. Many of the most famous images
43 of the Hopewell Culture are from artifacts
44 found at this park unit: mica bird claw, copper
45 bear paw, and mica hand with its elongated
46 fingers stretching upward. All of these

1 extraordinary features support the idea that
2 Hopewell Mound Group was possibly the
3 most important ceremonial center of all the
4 earthwork complexes in southern Ohio. This
5 park unit gives the Hopewell Culture its name
6 and sets the standard for what is considered
7 'Hopewell.' The park unit was entered into the
8 NRHP in 1974.

9

10 Seip Earthworks

11 Seip Earthworks is significant for being the
12 only existing example of the rare class of
13 extremely large Hopewell burial mounds.
14 It represents the only protected example
15 of a type of geometric enclosure known as
16 a tripartite earthwork, of which five once
17 existed in the Scioto and Paint Creek valleys
18 in southern Ohio. Rich ritual deposits
19 buried under the mound attest to Hopewell
20 ceremonialism, artistry, and long distance
21 interactions. Seip Earthworks was listed in
22 the NRHP in 1971.

23

24 High Bank Works

25 High Bank Works is among the largest and
26 most intricate earthwork complexes in the
27 Hopewell core area. The conjoined circle and
28 octagon mirrors the geometry of the Octagon
29 Earthworks at Newark, nearly 60 miles
30 away. These are the only two known circle
31 and octagon enclosures ever constructed.
32 The circles at both earthwork complexes are
33 exactly the same size, and are remarkable
34 for their monumental scale, geometric
35 complexity and precision, and for the
36 complicated set of lunar and solar alignments.
37 These exact similarities across vast distances
38 distinguish Hopewell earthwork complexes as
39 a uniquely inter-regional phenomenon. High
40 Bank Works was listed in the NRHP in 1973.

41

42

43

44

45

46

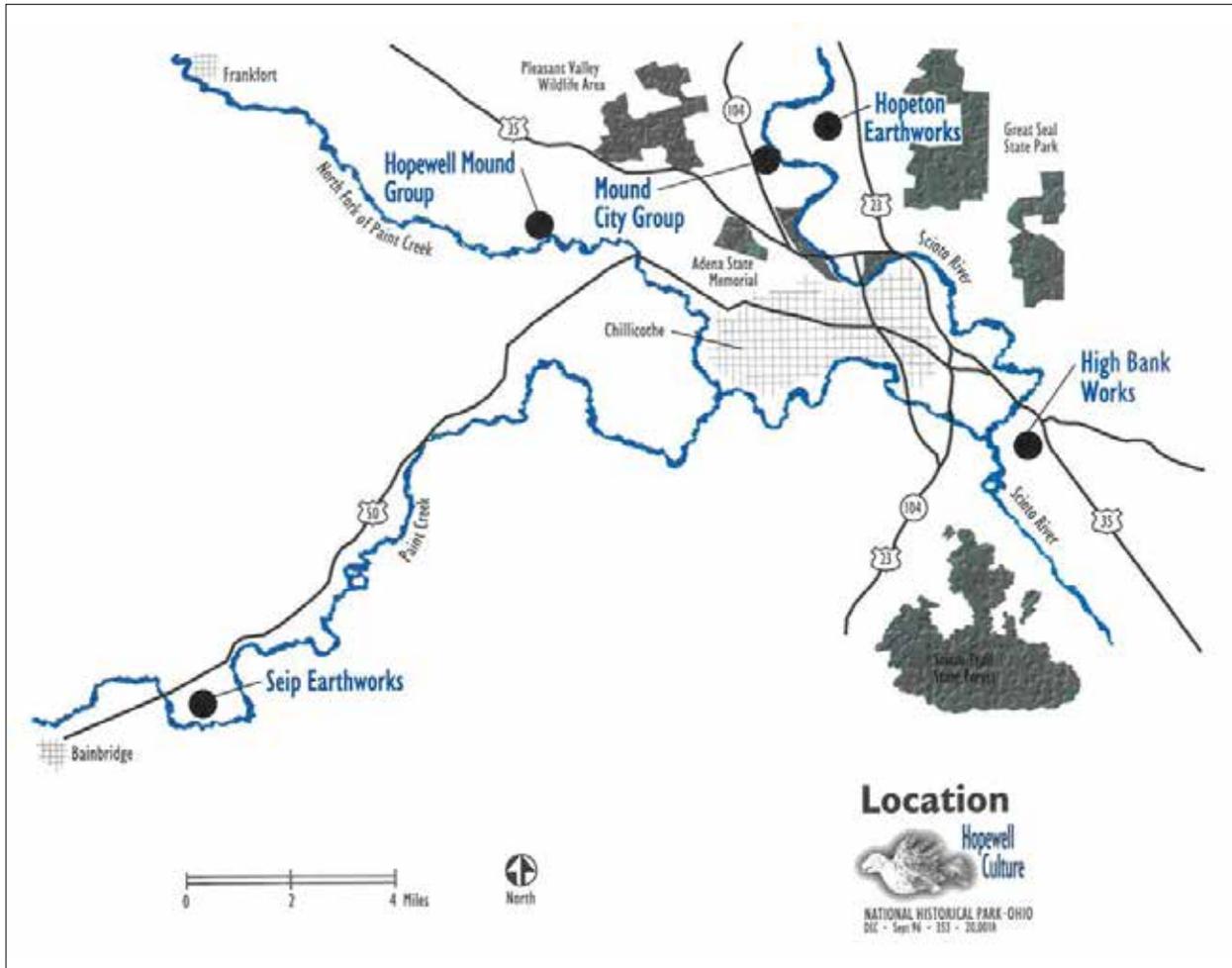


Figure 3-8. The 1997 GMP guides the management and stewardship of the six discontinuous park units. (GMP, 9)

Management

1 The study area is composed of five
 2 discontinuous park units that comprise
 3 Hopewell Culture NHP, owned and managed
 4 by the NPS. Legislation originally created
 5 the park in 1923 when Mound City Group
 6 was established as a National Monument, to
 7 “preserve prehistoric mounds of great historic
 8 and scientific interest . . . , and from all
 9 depredations and from all changes that would
 10 to any extent mar or jeopardize their historic
 11 value.” In 1980 the park was expanded by
 12 Congress to include 150 acres of the Hopeton
 13 Earthworks archeological landscape. In
 14 the same legislation, NPS was directed to
 15 investigate other earthwork complexes
 16 within the region for their suitability for
 17 preservation. Of 20 earthwork complexes
 18 considered, NPS recommended three
 19 archeological landscapes, plus the remainder
 20 of Hopeton Earthworks, for preservation as
 21 they represented some of the best examples
 22 of Hopewellian earthwork architecture.^{1.12}
 23
 24 In 1992 the park became a National Historical
 25 Park and was renamed Hopewell Culture
 26 NHP. The four recommended parcels— the
 27 remainder of Hopeton Earthworks, Hopewell
 28 Mound Group, Seip Earthworks, and High
 29 Bank Works, were authorized for addition
 30 to the park at this time. The new name
 31 recognized the park’s larger size, 1,134 acres,
 32 and greater complexity resulting from the
 33 addition of these parcels.^{1.13} Of these five park
 34 units, three have been developed for public
 35 access.

36
 37 The 1992 law establishing the NHP, initiated
 38 a special resource study to “determine the
 39 adequacy of the present unit boundaries.”^{1.14}
 40 Hopewell earthwork complexes specifically
 41 identified for further study included the

42 1.12 *GMP*, 2.

43 1.13 *GMP*, 2.

44 1.14 *GMP*, 2.

1 Harness Group near U.S. Highway 35, four
 2 miles south of Chillicothe; Cedar Bank
 3 near U.S. Highway 23, four miles north of
 4 Chillicothe; and Spruce Hill above Paint Creek
 5 and U.S. Highway 50, ten miles southwest of
 6 Chillicothe.^{1.15}
 7

8 Since the GMP was completed, Spruce Hill
 9 was added to the park’s legislated boundary
 10 in 2009. Spruce Hill is co-managed by the
 11 NPS and the Arc of Appalachia, a non-profit
 12 organization.^{1.16}
 13

14 The management of Hopewell Culture NHP
 15 is primarily guided by the 2014 Foundation
 16 Document; the 1997 General Management
 17 Plan (GMP); the 1999 Long Range
 18 Interpretive Plan (LRIP); Cultural Landscape
 19 Inventories (CLI) for Mound City Group,
 20 Hopeton Earthworks, and Hopewell Mound
 21 Group; numerous archeological surveys
 22 and investigations; and a World Heritage
 23 Nomination currently in preparation. A
 24 Foundation Document is currently being
 25 drafted for the park. It is intended to provide
 26 clear guidance on management priorities, and
 27 to identify the NHP’s fundamental resources
 28 and values.

29
 30 The GMP envisions Hopewell Culture
 31 NHP becoming an “international center
 32 for the interpretation, study, and resource
 33 preservation of the Hopewell Culture,”
 34 focused on “preservation with an emphasis
 35 on interpretation and research.” In addition
 36 to preserving lands with archeological
 37 earthwork complexes, the GMP recommended
 38 acquiring “adjacent lands or easements for
 39 necessary resource protection.”^{1.17}
 40

42 1.15 *GMP*, 2.

43 1.16 A separate appendix has been prepared for this park unit.

44 1.17 *GMP*, 17.

1 Mound City Group would remain the
2 central visitor center for orientation and
3 interpretation for the park and all park units,
4 and would have “expanded collection and
5 research facilities.”^{1.18}

6
7 • The goal of cultural resource management
8 recommended in the GMP is to “identify,
9 evaluate, preserve, interpret, and
10 protect significant cultural properties,
11 including archeological sites and cultural
12 landscapes.” The GMP specifically
13 notes that “protection of the cultural
14 environment would be given the highest
15 priority” in relationship to natural
16 resource management. The need for
17 archeological inventories and evaluations
18 is emphasized, particularly for the
19 recently added park units.^{1.19}

20
21 • Inventory and evaluation to determine
22 integrity, significance, and NRHP
23 eligibility of potential historic features
24 and archeological remains “thought
25 to pre-date 1850” is recommended, as
26 is an inventory of remnants of Camp
27 Sherman.^{1.20}

28
29 • The GMP notes the need for research
30 and investigations into the daily life,
31 settlement patterns, and subsistence of
32 the Hopewell.^{1.21}

33
34 • The treatment of earthwork complexes
35 for resource protection is emphasized
36 in the GMP to provide a meaningful
37 experience for visitors, and as a means
38 to interpret their ‘original extent,
39 appearance, and significance.’ A series of
40 treatment goals are recommended, and

42 1.18 GMP, 17.

43 1.19 GMP, 20.

44 1.20 *Draft General Management Plan / Environmental*
45 *Assessment, Hopewell Culture National Historical Park,*
46 *Ohio*, (NPS, 1996), 45. Specific areas of inquiry are listed
in the draft GMP / EA, and not included in the final.

46 1.21 GMP / EA, 45.

1 include preservation of original features
2 and materials, protection against further
3 deterioration (particularly related to
4 cultivation), research and correction
5 of any inaccurate reconstructions,
6 stabilization by non-invasive vegetation,
7 restoration of select archeological
8 features, and “outline features” for
9 interpretation.^{1.22}

10
11 • The GMP recommends natural resource
12 management “follow recommendations of
13 an approved cultural landscape report,”
14 with natural resources to be more actively
15 managed, for control and elimination
16 of “non-native flora,” and for aggressive
17 habitat restoration associated with
18 threatened and endangered species.^{1.23}

19
20 • A physical network of trails and waterway
21 routes is recommended in the GMP to
22 promote resource conservation, offer
23 visitors alternative modes of travel
24 between park units, and to connect to
25 local and regional greenways, and park
26 and open space properties.^{1.24}

27
28 • Four management zones recommended
29 in the GMP include a limited access
30 zone for preservation and research of
31 archeological features; natural resource
32 zone for preservation and restoration
33 of native ecosystems with limited
34 visitor access; pedestrian zone where
35 visitors could view and walk among the
36 earthwork complexes; and a development
37 zone where park and visitor facilities
38 for visitor use, orientation, education,
39 and maintenance would be developed.
40 An educational subzone and special use
41 subzone are also included.

45 1.22 GMP, 21.

46 1.23 GMP, 24.

46 1.24 GMP, 29.

1 The 1997 Long Range Interpretive
2 Plan (LRIP) “provides guidance for the
3 interpretation and education programs at
4 Hopewell Culture NHP; and for development
5 of visitor experiences, interpretive media,
6 and facilities “to meet the purpose and
7 significance of the park.” The LRIP intends
8 for these actions to be accomplished to
9 provide quality experiences, and to protect
10 irreplaceable resources.^{1.25}

11
12 • The LRIP presents a primary interpretive
13 theme, supported by a series of secondary
14 themes as the framework for the park’s
15 interpretive program. The primary theme
16 is to interpret the Hopewell Culture,
17 from daily life, to artistry and earthwork
18 complexes —“construction techniques,
19 especially of geometric earthworks,
20 demonstrated sophisticated engineering,
21 architecture and mathematics, and
22 significant investments of human labor;”
23 to the preservation of archeological
24 features and earthwork complexes,
25 to understanding early archeology in
26 the park.^{1.26} Secondary themes are to
27 interpret Camp Sherman and the Ohio-
28 Erie Canal.^{1.27}

29
30 • The LRIP supports the goal of the GMP
31 to create an international center for
32 interpretation, study and preservation of
33 the Hopewell Culture; and recommends
34 three complexes be open to the public—
35 Mound City Group, Hopewell Mound
36 Group, and Seip Earthworks; and two
37 complexes to be devoted to preservation
38 and research, Hopeton Earthworks and
39 High Bank Works. To support this goal,
40 the LRIP recommends new or renovated
41 facilities for visitor use, and collections
42 and research. An expanded visitor center
43 at Mound City Group is envisioned to

44
45 1.25 *LRIP*, 2.

46 1.26 *LRIP*, 16-19.

1.27 *LRIP*, 19.

1 provide increased exhibit and museum
2 space, a research center with controlled
3 public access, and indoor and outdoor
4 education areas. Wayside exhibits are
5 envisioned for each park unit open to the
6 public, some of which have been recently
7 revised, as are park trails.^{1.28}

8
9 • For Hopewell Mound Group, the LRIP
10 recommends a new seasonal contact
11 station, trail connections to the county
12 regional trail, new wayside exhibits, new
13 trails of varying degrees of difficulty,
14 and interpretation of the earthwork
15 complexes by ‘outlining’ the archeological
16 features.

17
18 • An off-site “multi-agency visitor center”
19 is envisioned in the LRIP for Seip
20 Earthworks, as are linkages to the high
21 school, viewing platform, demonstration
22 garden, and trails that include a greenway
23 trail along Paint Creek, and a rails-to-trails
24 route.^{1.29}

25
26 • For Hopeton Earthworks and High
27 Bank Works, the two complexes noted
28 to be archeological research sites,
29 the LRIP envisioned a short trail with
30 interpretive wayside for visitor access,
31 with the remainder primarily for active
32 archeological investigations.^{1.30}

33
34 Recent archeological research and
35 investigations guide management decisions
36 within the park. Modern archeological
37 investigations focus on less-intrusive methods
38 than in the past.

39
40 • High resolution mapping, including
41 magnetic surveying are being used to
42 identify extant below-grade archeological
43 features.

44
45 1.28 Hopewell Culture NHP, *LRIP*, 37-45.

46 1.29 Hopewell Culture NHP, *LRIP*, 49-52.

1.30 Hopewell Culture NHP, *LRIP*, 55-57.

1 • Radiocarbon dating, pollen and phytolith
2 analysis, soil micromorphological
3 analysis, etc., are being used to shed
4 further light on the Hopewell Culture.
5
6 • Magnetic surveys commissioned by
7 the NPS have resulted in more detailed
8 maps of the earthwork complexes,
9 revealing previously unverified deposits
10 and features that must be managed as
11 archeological resources.
12
13 • Field investigations demonstrate that
14 plowing has only caused superficial
15 disturbance to upper mound strata.
16
17 • Recent high resolution topographic
18 mapping using LiDAR (“light radar”)
19 technology provides evidence on the
20 integrity of the earthwork architecture.
21
22 • Archeological salvage investigations
23 are used to remove archeological
24 material that is threatened by erosion
25 by waterways (e.g. 2004 to 2006
26 investigations at Hopewell Mound Group
27 removed deposits threatened by potential
28 erosion of North Paint Creek).^{1.31}
29
30 Vegetation management is informed by the
31 archeological studies, which reveal that
32 managing earthwork complexes as hay
33 fields, cut and baled one to three times per
34 year, establishes an effective barrier to soil
35 erosion, enhances visibility of the earthwork
36 complexes, and facilitates access for
37 archeological research.
38
39 • Native plant cover obscures the
40 earthwork complexes, especially during
41 the growing season when most visitation
42 occurs. Prescribed burning would be
43 a sustainable method of reducing the
44
45
46

1.31 Bret Ruby, “Authenticity and Integrity of the Hopewell
Mound Group,” Draft World Heritage Nomination, 2.

1 biomass, but burning has been shown to
2 interfere with magnetic surveys and may
3 introduce carbon that could interfere with
4 radiocarbon dating efforts.
5
6 • Recently, an Executive Order on proper
7 herbicide use was issued to help the park
8 protect pollinators.^{1.32}
9
10 The park units and two affiliated properties
11 began a nomination process for the UNESCO
12 World Heritage List in 2013. The nomination
13 is currently under review. The seven
14 archeological landscapes nominated include
15 the five park units of Hopewell Culture NHP,
16 Newark Earthworks State Memorial, and Fort
17 Ancient State Memorial, the latter two owned
18 and managed by the Ohio History Connection.
19
20 Upon approval, the World Heritage
21 Nomination (WHN) will provide a statement
22 of integrity and authenticity for each
23 earthwork complex, a summary of field
24 investigations, and history.
25
26 • The WHN provides a basis for
27 preservation and care that is required to
28 maintain World Heritage status.
29
30 • The nomination identifies threats to the
31 park units and how they can be mitigated.
32
33 • It provides a rationale for any
34 archeological salvage investigations that
35 might be required in order to protect the
36 integrity of the park units.
37
38 • It stresses the need for protection of
39 these earthwork complexes, indicates the
40 importance of maintaining or expanding
41 the park unit boundaries to encompass
42 all or most of the earthwork complexes,
43
44
45
46

1.32 Presidential Memorandum for Heads of Executive
Departments and Agencies. Creating a Federal Strategy to
Promote the Health of Honey Bees and Other Pollinators,
June 20, 2014.

1 and boundary adjustments that may be
2 necessary to provide a protective buffer
3 against encroaching development.^{1.33}

4 Management Issues

5 The following summarizes management
6 issues identified during the research,
7 inventory, and evaluation of Hopewell Culture
8 NHP's archeological landscape.

9 Need for Research and Archeological

10 Investigations

11 The six park units encompass some of the
12 most important archeological complexes in
13 the nation, for which additional scientific
14 investigations and systematic study continue
15 to be needed.

16 • Recent magnetic surveys revealed
17 important findings on extant below-grade
18 features, not currently visible on the
19 surface. The survey work completed for
20 Mound City Group and High Bank Works
21 on parcels within NPS ownership have
22 revealed the extent of extant below-grade
23 features. This same level of investigation
24 is needed for the other park units
25 including Hopeton Earthworks, Hopewell
26 Mound Group, and Seip Earthworks, and
27 for archeological features that remain on
28 private property including portions of
29 High Bank Works. Hopeton Earthworks,
30 and Seip Earthworks.

31 • Recent magnetic surveys have confirmed
32 that most reconstructions of mounds and
33 earthen walls have occurred in historic
34 locations, i.e., in relationship to identified
35 below-grade features identified in these
36 magnetic surveys. However not all
37 mounds or earthen walls were surveyed,
38 and additional investigations are needed.

39
40
41
42
43
44
45 1.33 Ruby, "Authenticity and Integrity of the Hopewell Mound
46 Group," 3.

1 • Reconstructions of mounds and
2 earthen walls may not have been built
3 with materials that match the original
4 materials in the original compositions.
5 Additional research, investigations, and
6 magnetic surveys are needed to confirm
7 material reconstructions.

8 • Additional magnetic surveys are
9 needed to confirm accuracy of some
10 reconstructions. Potential archeological
11 features for additional investigation
12 include the earthen wall at Seip
13 Earthworks.

14 • Little is known of early American Indian
15 habitation sites in relationship to the
16 earthwork complexes, and of modes of
17 circulation (waterways and overland
18 routes) between earthwork complexes.
19 More information on the lives of the
20 Hopewell people, who built and used
21 the earthwork complexes, is critical to
22 understanding settlement in the region,
23 and the purpose and use of the earthwork
24 complexes.

25 • Additionally, archeological research is
26 needed to identify vegetation evident
27 during the period of significance. This
28 could include pollen and seed analysis
29 from excavations.

30 Need for Earthwork Complex Preservation

31 Earthwork complexes within Hopewell
32 Culture NHP include reconstructions of
33 mounds and earthen walls, re-excavation
34 of borrow pits, and protection of extant
35 original materials. Vegetation management
36 on archeological features varies from mown
37 lawn to native grasslands.

38 A consistent long-term strategy for
39 earthwork preservation is needed, in which
40 best management practices are identified
41 based on those undertaken for nationally

1 and internationally significant earthwork
2 complexes.

3
4 • Vegetation on many archeological features
5 is managed as mown lawn, hay fields, or
6 crop fields.^{1.34} In some areas, archeological
7 features are covered by native grassland
8 vegetation. Some earthwork complexes,
9 still privately owned, continue to be
10 cultivated for agricultural purposes.
11 Earthwork complexes in active cultivation
12 continue to degrade by plowing and other
13 agricultural practices.

14
15 • In park units with reconstructed
16 archeological features, mown lawn is
17 the vegetation management approach
18 for earthen walls, mounds, and borrow
19 pits. This is the same vegetation used
20 for visitor or public use areas. Mown
21 lawn clearly defines the extent of the
22 archeological feature and its topography;
23 however, it is subject to erosion and
24 requires extensive maintenance. In areas
25 where earthwork complexes are mown
26 lawn, such as Mound City Group, the
27 extensive use of a singular vegetation type
28 assists in the visibility of the individual
29 archeological features. However,
30 using mown lawn for both earthwork
31 complexes and visitor areas creates a
32 confusing experience.

33
34 • Many earthwork complexes are managed
35 as field vegetation, with some specific
36 archeological features or portions of
37 features managed as hay fields. In some
38 earthwork complexes, limited public
39 access is via mown paths. Field vegetation
40 generally grows to a height that obscures
41 the subtle topographic presence of the
42 archeological features. Hay fields assist

44 1.34 Mown lawn is regularly mown turf grass species;
45 hay fields are primarily grass species with regular or
46 occasional cultivation; crop fields are yearly cultivated
crop species such as corn, soybeans, or wheat.

1 in defining the archeological features, but
2 due to the low height of many features,
3 the form is still difficult to discern.

4
5 • Mown paths are used to provide visitor
6 access. When paths cross or transect
7 archeological features, it can be confusing
8 because it is difficult to know if the path
9 follows the outline of an archeological
10 feature and wayfinding is difficult.

11
12 • In earthwork complexes with native
13 grasslands, archeological features are
14 completely obscured due to the density
15 and height of the vegetation. Deep roots
16 of native grasslands may impact below-
17 grade features. Native vegetation occurs
18 in other areas within the park units,
19 near rivers and on the exterior of some
20 earthwork complexes. Placing a native
21 vegetation type within an earthwork
22 complex creates a confusing scene for
23 visitors in which it is difficult to discern
24 between an earthwork complex and a
25 native area.

26
27 • Other vegetation management issues
28 include erosion on steeper slopes of
29 mounds and earthen walls, and burrowing
30 animals and mowing equipment. Erosion
31 is due to natural forces and pedestrians
32 accessing the mounds.

33
34 • Archeological materials have been
35 compromised due to agricultural
36 practices, intrusive archeological
37 excavations, and the presence of
38 buildings, roads, and other features
39 built upon the earthwork complexes. As
40 a result, a large amount of the original
41 archeological features have been
42 removed, damaged, or destroyed.

43
44 • Burning has been shown to interfere with
45 magnetic surveys to identify subsurface
46 archeological features. Burning introduces

- 1 modern carbon into the soil that may
2 interfere with radiocarbon dating.
3
- 4 • Tall grasses create habitat for destructive
5 burrowing animals such as groundhogs,
6 and make it difficult to monitor
7 archeological landscapes for the presence
8 of destructive burrowing animals.
9
 - 10 • Tall grasses and shrubs limit access for
11 archeological research, especially the
12 new generation of large-scale geophysical
13 survey instruments that require low,
14 mown vegetation for data collection
15

16 Acquisition of Significant Earthwork Complexes

17 The establishment of Hopewell Culture NHP
18 in 1992, and expansion of park boundaries
19 in 2000, preserved several significant
20 earthwork complexes—the remainder of
21 Hopeton Earthworks, Hopewell Mound Group
22 (2000 boundary expansion gained a greater
23 portion of the earthwork), Seip Earthworks,
24 and High Bank Works. However, some
25 portions of certain earthwork complexes
26 remain in private ownership, with some still
27 in agricultural cultivation. These include a
28 portion of Seip Earthworks, and the center
29 parcel of High Bank Works.
30

31 Several additional Hopewell complexes were
32 identified in the 1992 enabling legislation,
33 which authorized special resource studies
34 to evaluate the Harness Group, Cedar Banks,
35 Spruce Hill, the Mann Site in Indiana, and
36 other earthwork complexes. The Harness
37 Group, Spruce Hill and Mann Site studies
38 have been completed, but additional special
39 resource studies are needed to evaluate the
40 desirability and feasibility of preserving
41 additional earthwork complexes as park
42 units, or by other means.^{1.35}
43

44
45 1.35 Cedar-Bank Works and Edwin Harness Mound are both
46 located in Ross County, approximately 10 miles north of
Chillicothe.

1 Adjacent lands threaten setting and Earthwork 2 Complexes

3 Some adjacent land uses threaten the setting.
4 Ongoing residential development occurs
5 close to some park units; and Mound City
6 Group is adjacent to two government owned
7 institutional facilities, including two state
8 prisons and a U.S. Veterans Administration
9 hospital. A privately-owned gravel pit is
10 adjacent to Hopeton Earthworks, and has
11 damaged archeological resources. Public
12 and private roads and utilities have right-of-
13 ways across the park units. Some of the roads
14 have damaged the earthwork complexes,
15 and overhead power lines disrupt views and
16 the spatial organization of the earthwork
17 complexes. Agricultural activities are adjacent
18 to most park units. Portions of park units,
19 not owned by the NPS, are cultivated yearly
20 with corn and soybean fields. Crop cultivation
21 damages earthwork complexes.
22
23
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Related Laws, Regulations, Policies, Orders, and Planning Documents

1 Several guiding laws and policies, as well as
2 previous planning project reports, provide
3 background and management information
4 for this CLR / EA. Relevant laws, policies, and
5 plans are described below.

6 Guiding Laws and Policies

7 National Environmental Policy Act of 1969 as 8 Amended

9 NEPA was passed by Congress in 1969 and
10 took effect on January 1, 1970. This legislation
11 established the country's environmental
12 policies, including the goal of achieving a
13 productive harmony between human beings
14 and the physical environment for present
15 and future generations. NEPA provides the
16 tools to implement these goals by requiring
17 that every federal agency prepare an in-
18 depth study of the impacts of "major federal
19 actions having a significant effect on the
20 environment" and alternatives to those
21 actions. NEPA also requires that each agency
22 makes that information an integral part of its
23 decision-making process. In addition, NEPA
24 requires that agencies make a diligent effort
25 to involve interested members of the public
26 before agencies make decisions affecting the
27 environment. NEPA is implemented through
28 regulations of the Council on Environmental
29 Quality (CEQ).^{1,36}

30 31 32 Natural Resource Management Reference 33 Manual #77

34 The Natural Resource Management Reference
35 Manual #77 offers comprehensive guidance to
36 National Park Service employees responsible
37 for managing, conserving, and protecting
38 the natural resources found in National Park
39 System units. This Reference Manual serves
40 as the primary Level 3 guidance on natural
41 resource management in units of the National

42
43 1.36 40 CFR 1500-1508.

1 Park System, replacing NPS-77, The Natural
2 Resource Management Guideline, issued in
3 1991 under the previous NPS guideline series.

4 5 National Historic Preservation Act of 1966, as 6 Amended

7 The NHPA, as amended, protects buildings,
8 sites, districts, structures, and objects
9 that have significant scientific, historic, or
10 cultural value. The act established affirmative
11 responsibilities of federal agencies to
12 preserve historic and prehistoric resources.
13 Effects on properties that are listed in, or
14 that are eligible for listing in, the NRHP
15 must be taken into account in planning and
16 operations. Any property that may qualify for
17 listing on the NRHP must not be inadvertently
18 transferred, sold, demolished, substantially
19 altered, or allowed to deteriorate.

20
21 Section 106 of the NHPA requires federal
22 agencies to take into account the effects of
23 their undertakings on historic properties. The
24 Advisory Council on Historic Preservation
25 (ACHP) is then afforded a reasonable
26 opportunity to comment. The historic
27 preservation review process mandated by
28 Section 106 is outlined in regulations issued
29 by the ACHP. Revised regulations, known as
30 "Protection of Historic Properties" (36 CFR

31 Part 800), were updated on August 5, 2004.
32 In addition to considering the effects of their
33 undertakings on historic properties, Section
34 110 of the NHPA requires federal agencies to
35 establish a historic preservation program to
36 identify and protect historic properties under
37 their management or control. The plans must
38 include a process for evaluating historic
39 properties for listing in the NRHP.

40 41 NPS Organic Act of 1916

42 By enacting the NPS Organic Act of 1916,
43 Congress directed the U.S. Department of

1 the Interior and NPS to manage units “to
2 conserve the scenery and the natural and
3 historic objects and wildlife therein and to
4 provide for the enjoyment of the same in such
5 a manner and by such a means as will leave
6 them unimpaired for the enjoyment of future
7 generations.”^{1.37}

8
9 Impairment is an impact that, in the
10 professional judgment of the responsible
11 NPS manager, would harm the integrity
12 of park resources or values, including the
13 opportunities that otherwise would be
14 present for the enjoyment of those resources
15 or values. Whether an impact meets this
16 definition depends on the particular
17 resources that would be affected; the severity,
18 duration, and timing of the impact; the direct
19 and indirect effects of the impact; and the
20 cumulative effects of the impact in question
21 and other impacts. An impact would be less
22 likely to constitute an impairment if it is an
23 unavoidable result of an action necessary
24 to preserve or restore the integrity of park
25 resources or values and it cannot be further
26 mitigated.

27
28 *NPS Management Policies 2006*
29 NPS Management Policies 2006 provides
30 guidance for all management decisions,
31 including decisions related to archeological
32 resources. Archeological resources, including
33 archeological landscapes and historic
34 structures, are addressed in section 5.0,
35 which states the NPS cultural resources
36 management program involves “...stewardship
37 to ensure that cultural resources are
38 preserved and protected, receive appropriate
39 treatments (including maintenance) to
40 achieve desired conditions, and are made
41 available for public understanding and

42
43 ^{1.37} 16 United States code [USC] section 1.

1 enjoyment.” The policy goes on to state
2 that “each park’s resource stewardship
3 strategy will provide comprehensive
4 recommendations about specific actions
5 needed to achieve and maintain the desired
6 resource conditions and visitor experiences
7 for the park’s cultural resources.”^{1.38}

8
9 *Director’s Order-12 (2001, rev. 2011) and*
10 *Handbook (2001)*
11 DO-12 and Handbook provides the
12 instruction or procedures by which the
13 NPS complies with NEPA and for practicing
14 environmental impact assessment and
15 resource conservation.^{1.39} DO-12 and
16 Handbook provide the framework for
17 the NPS’s approach in environmental
18 analysis, public involvement, and making
19 resource-based decisions. The order and
20 handbook require a full and open evaluation,
21 interdisciplinary approach, and technical and
22 scientific analysis of management decisions.

23
24 *Director’s Order-28: Cultural Resource*
25 *Management*
26 DO-28 elaborates on the existing laws
27 for cultural resources including, but not
28 limited to, the 1916 NPS Organic Act, NPS
29 Management Policies 2006, and NHPA.^{1.40}
30 DO-28 offers guidance in applying the laws
31 and regulations regarding cultural resource
32 management to establish, maintain, and
33 refine park cultural resource programs.

34
35 Executive Order 11593, “Protection and
36 Enhancement of the Cultural Environment”
37 Executive Order (EO) 11593 mandates that
38 all agencies 1) compile an inventory of the
39 cultural resources for which they are the

40
41 ^{1.38} NPS, *Management Policies 2006*.

42 ^{1.39} NPS, *Director’s Order-12 (2001, rev. 2011) and Handbook*
43 *(2001)*.

43 ^{1.40} NPS, *DO-28: Cultural Resource Management*, 2002.

1 trustee, 2) nominate all eligible government
2 properties to the NRHP, 3) preserve and
3 protect their cultural resources, and 4)
4 ensure that agency activities contribute to the
5 preservation and protection of non-federally
6 owned cultural resources.

7
8 Executive Order 11990, "Protection of
9 Wetlands"

10 EO 11990, "Protection of Wetlands" is an
11 order to avoid adverse impacts associated
12 with the destruction or modification of
13 wetlands. The order requires agencies to
14 "take action to minimize the destruction, loss,
15 or degradation of wetlands, and to preserve
16 and enhance the natural and beneficial values
17 of wetlands in carrying out the agencies'
18 responsibilities." The order applies to
19 acquisition, management, and disposition of
20 federal lands and facilities construction and
21 improvement projects that are undertaken,
22 financed, or assisted by federal agencies, and
23 federal activities and programs affecting land
24 use.

25
26 2011 Guidance for Non-impairment

27 Determinations and the NPS NEPA Process

28 New guidance for non-impairment
29 determinations was approved by the NPS in
30 September 2011. The new guidance states
31 that non-impairment determinations will only
32 be required for the preferred alternative in
33 NEPA documents and that the determination
34 will be appended to the decision document
35 (FONSI or Record of Decision (ROD))
36 (previously included in the analysis for
37 each resource area). The new guidance will
38 be included in the upcoming revised DO-
39 12 Handbook. Based on the new guidance,
40 the non-impairment determination will be
41 appended to the decision document for this
42 EA.

43

1 Relevant Planning Documents, Related
2 Studies, Recommended Future Studies

3 In addition to NPS management policies,
4 the following park-specific documents
5 provided information on park resources and
6 management strategies and priorities.

7
8 General Management Plan

9 The General Management Plan provides
10 broad management direction for resource
11 management, visitor use, and development
12 15-20 years into the future.^{1.41}

13

14 Long Range Interpretive Plan

15 The Long Range Interpretive Plan articulates
16 a vision for the park's interpretive future, and
17 recommends the media and programs best
18 suited for meeting visitor needs, achieving
19 management goals, and telling the park
20 stories.^{1.42}

21

22 Wildland Fire Management Plan

23 The Wildland Fire Management Plan outlines
24 a detailed program of actions to be taken by
25 the park to meet the fire management goals
26 for the area.^{1.43} The fire management program
27 at the park was developed to balance the
28 park's goals with the goals of the National
29 Fire Plan.^{1.44} Resource management objectives
30 determine whether fire may be used as a tool
31 to manipulate vegetation and how fire will be
32 managed.

33

34 Heartland Invasive Plant Management Plan

35 The Heartland Inventory and Monitoring
36 Network (HTLN) is part of the nationwide
37 Inventory and Monitoring Program of

38

39 1.41 GMP.
40 1.42 LRIP.

41 1.43 GMP.

42 1.44 *Managing the Impact of Wildfires on Communities and*
43 *the Environment.* (Washington, D.C.; U.S. Departments of
Agriculture and Interior: 2000).

Environmental Assessment Impact Topics

1 the NPS.^{1.45} HTLN parks in eight states
 2 (Arkansas, Indiana, Iowa, Kansas, Minnesota,
 3 Missouri, Nebraska, and Ohio) propose
 4 the establishment of an invasive plant
 5 management team (IPMT) action plan to
 6 control invasive plants cooperatively. This
 7 will support restoration of native vegetation
 8 in several ecosystem types associated with
 9 tallgrass prairies, eastern deciduous forests,
 10 interior highlands, and the Mississippi
 11 floodplain within the parks.

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41 1.45 S.A. Middlemis-Brown and C.C. Young. *Heartland Invasive*
 42 *Plant Management Plan and Environmental Assessment.*
 43 *Natural Resource Data Series NPS/MWR/HLN/NRDS-*
2012/XXX. (Philadelphia, PA; National Park Service 2012).

1 Scope of the Report

2 This CLR / EA has been prepared to
 3 evaluate potential effects on environmental,
 4 socioeconomic, and cultural resources from
 5 the proposed treatment alternative and a no
 6 action alternative. The CLR / EA provides the
 7 decision-making framework that:

- 8
- 9 1. Analyzes a reasonable range of
- 10 alternatives to meet objectives of the
- 11 proposal,
- 12
- 13 2. Evaluates potential issues and impacts to
- 14 the park's resources and values, and
- 15
- 16 3. Identifies mitigation measures to lessen
- 17 the degree or extent of these impacts.
- 18

19 Impact topics evaluated in detail in this EA
 20 are cultural resources, vegetation, wildlife,
 21 visual resources, visitor use and experience,
 22 and park operations and maintenance. Some
 23 impact topics were dismissed because the
 24 project would result in no more than minor
 25 effects. No major effects were identified
 26 as a result of implementing the proposed
 27 alternatives in an initial analysis of effects.
 28 The public, regulatory agencies, and other
 29 stakeholders have an opportunity to comment
 30 on this CLR / EA. Comments received will be
 31 considered in the final evaluation of effects.

32

33 Scoping

34 Scoping is an early and open process
 35 to determine the breadth of issues
 36 and alternatives to be addressed in an
 37 environmental assessment. Park staff and
 38 resource professionals of the NPS Midwest
 39 Regional Office conducted internal scoping.
 40 This interdisciplinary process defined the
 41 purpose and need, identified potential actions
 42 to address the need, determined the likely
 43 issues and impact topics, and identified the

1 relationship of the proposed action to other
2 planning efforts at the park.
3
4 As part of tribal consultation, scoping letters
5 were sent to federally recognized tribes
6 on February 4, 2015, to initiate informal
7 consultation on the CLR/EA. The tribes and
8 governments that received letters are:
9
10 • Absentee-Shawnee Tribe of Indians of
11 Oklahoma
12 • Delaware Nation
13 • Delaware Tribe of Indians
14 • Eastern Shawnee Tribe of Oklahoma
15 • Miami Tribe of Oklahoma
16 • Ottawa Tribe of Oklahoma
17 • Seneca-Cayuga Tribe of Oklahoma
18 • Shawnee Tribe
19 • Wyandotte Nation
20
21 The NHPA requires the consideration of
22 impacts on cultural resources, either listed
23 in or eligible to be listed in, the National
24 Register.^{1.46} Park staff sent a scoping letter to
25 the Ohio State Historic Preservation Officer
26 (SHPO) on February 4, 2015 to solicit input
27 on issues of concern. The park will continue
28 to consult with the SHPO to determine the
29 effects of the action alternatives on eligible
30 historic resources and to develop mitigation
31 for impacts on historical features, if any, from
32 the preferred alternative.
33
34 The park also sent a scoping letter on
35 February 4, 2015 to the U.S. Fish and Wildlife
36 Service (USFWS) to solicit input on issues
37 of concern. The USFWS Ohio Field Office
38 responded to the scoping letter in a letter
39 dated February 25, 2015, recommending a
40 consultation with ODNR. **A response from**
41 **ODNR has not yet been received.**
42
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1 The park initiated public scoping with a
2 press release that was sent to the **NAME OF**
3 **PUBLICATION, published on xxx xxx, 2015.**
4 **[This statement is for draft review purposes**
5 **only and will be modified in subsequent**
6 **drafts based on the actual publication date]**
7
8 **Issues and Impact Topics**
9 An important part of the decision-making
10 process is seeking to understand the
11 consequences of making one decision
12 over another. This CLR / EA identifies the
13 anticipated impacts of possible actions
14 on certain resources, park visitors, and
15 neighbors. The impacts are organized by
16 topic, such as “vegetation” or “public health
17 and safety.” Impact topics serve to focus
18 the environmental analysis and ensure the
19 relevance of impact evaluation.
20
21 Impact topics were developed from the
22 questions and comments brought forth
23 during scoping; existing conditions; staff
24 knowledge of the park resources; and
25 any laws, regulations, policies, or orders
26 applicable to the project. Some topics were
27 dismissed from detailed analysis because the
28 resource is not present in the study area, or
29 because the action alternatives would either
30 have no effect on the impact topic, or the
31 effects would be negligible to minor. Some
32 impact topics were retained even though
33 the effects of the alternatives would be
34 negligible to minor because the impact topic
35 is a particularly sensitive resource, or was
36 identified as an important topic in scoping.
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1.46 16 USC 470 et seq.

TABLE 1-1. Impact Topics Retained and Relevant Laws, Regulations, and Policies

Impact Topic	Reasons for Retaining Impact Topic	Relevant Laws, Regulations, and Policies
Cultural Landscapes, Archeological Sites, and Historic Structures / Objects	The treatment recommendations for archeological landscapes are key issues of the CLR / EA. Because implementing one or more of the alternatives may result in changes to archeological landscapes and historic structures and because ground disturbances may affect archeological sites (i.e., disturb buried artifacts) this topic was retained for further analysis.	Sections 106 and 110 of the NHPA; ACHP implementing regulations regarding the “Protection of Historic Properties” (36 CFR 800); DO-28: Cultural Resource Management Guidelines; NPS Management Policies 2006; Secretary of the Interior’s Standards for the Treatment of Historic Properties; NEPA; Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1996); Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation; DO-28A: Archeology (NPS 2004)
Vegetation	Vegetation disturbance could occur and the introduction of invasive nonnative species is possible from ground-disturbing activities. Because the alternatives have the potential to affect vegetation, including state listed species, this topic was retained for further analysis.	NPS Organic Act; NPS Management Policies 2006; Resource Management Guidelines (NPS-77); Federal Noxious Weed Control Act; EO 13112, “Invasive Species” (NPS 1999)
Wildlife	Changes in vegetation may alter wildlife habitat and could affect wildlife in the project area. Because the CLR / EA alternatives have the potential to affect wildlife habitat, including for state listed species, this topic was retained for further analysis.	NPS Organic Act; enabling legislation; NPS Management Policies 2006; NPS-77

Impact Topic	Reasons for Retaining Impact Topic	Relevant Laws, Regulations, and Policies
Visual Resources	Modifications to the archeological landscape proposed in the CLR / EA alternatives may alter the views for park visitors; therefore, this topic was retained for further analysis.	NPS Management Policies 2006
Visitor Use and Experience	The CLR / EA alternatives could affect overall visitor understanding of the park, including interpretive and educational opportunities and, therefore, this topic was retained for further analysis.	NPS Organic Act; NPS Management Policies 2006
Park Operations and Maintenance	Park operations and maintenance activities could be affected by the CLR / EA alternatives; therefore, this topic was retained for further analysis.	NPS Management Policies 2006

1 Impact Topics Selected for Analysis

2 The issues identified during scoping that
3 are evaluated in this CLR / EA are potential
4 effects on the following resources:

- 5
- 6 • Archeological landscapes, archeological
 - 7 sites, and historic structures / objects
 - 8 • Vegetation
 - 9 • Wildlife
 - 10 • Visual resources
 - 11 • Visitor use and experience
 - 12 • Park operations and maintenance

13

14 Table 1 discusses the retained impact topics;
15 the reasons for retaining the topic; and
16 relevant laws, regulations, and policies.

17

18 **Impact Topics Dismissed from Further**
19 **Consideration**

20 The following impact topics or issues were
21 eliminated from consideration because either
22 the resources are not present in the areas
23 proposed for management implementation or
24 because the effects, if any, would be negligible
25 to minor.

26

27 Natural Resources

28 Air Quality

29 Ross County is designated as a Class II Air
30 Quality area under the 1963 Clean Air Act, as
31 amended.^{1.47} The park and the State of Ohio do
32 not monitor air quality. The local and short-
33 term changes in air quality associated with
34 emissions from construction or maintenance
35 equipment during implementation of the
36 proposed action alternatives would have
37 a negligible effect on regional and local air
38 quality. Because there would be a negligible
39 effect on regional and local air quality from
40 the proposed alternatives, this impact topic
41 was dismissed from further analysis.

42

43 Climate Change

44 As discussed above, any local, short-term
45 emissions associated with the proposed

46

1 alternatives would be negligible. These
2 emissions would have an indiscernible
3 effect on climate change. Changes in visitor
4 use following implementation of action
5 alternatives would not result in a substantial
6 increase in traffic to the park. Because
7 the proposed alternatives would result in
8 indiscernible contributions to climate change,
9 this impact topic was dismissed from further
10 analysis.

11

12 Geology and Soils

13 The NPS Organic Act and NPS Management
14 Policies 2006 direct the NPS to preserve and
15 protect geologic resources and maintain
16 natural geologic and coastal processes and
17 preserve and protect soil resources. The
18 park is located in south-central Ohio, an area
19 that has experienced numerous episodes of
20 glaciation.^{1.48} The major geologic features
21 include glacial outwash, moraines, and
22 terraces formed by rivers cutting through
23 glacial till and outwash.^{1.49} Soils at the
24 earthwork park units are dominated by silty
25 to gravelly loams formed in the floodplains
26 of Paint Creek, North Paint Creek, and the
27 Scioto River. Most of the land at the park units
28 has been cultivated in the past or is currently
29 under cultivation. Geologic and soil resources
30 do not contribute to the significance of the
31 park and no important or unusual geologic
32 formations would be affected by the
33 alternatives.

34

35 The proposed action alternatives would have
36 little to no impact on park geology or soils
37 because no extensive excavation is proposed.
38 There would be minor soil disturbances
39 associated with proposed visitor facilities,
40 but adverse effects would be minimized
41 by limiting areas of disturbance and by
42 revegetating temporarily disturbed areas

43

44 1.48 Hopewell Culture NHP, Ancillary Map Information
Document. (National Park Service, 2009)

45 1.49 Hopewell Culture NHP, Ancillary Map Information
Document. (National Park Service, 2009)

1.47 NPS. 2004, 14. 42 USC 7401 et seq.

1 as soon as possible following completion
2 of work. As a result, at most, the action
3 alternatives would have local short-term
4 and long-term negligible adverse effects on
5 geologic and resources in the project area.
6 The no action alternative would have no effect
7 on geologic or soil resources. Because impacts
8 to geologic and soil resources would be no
9 more than negligible under the proposed
10 alternatives, this impact topic was dismissed
11 from further analysis.

13 Prime or Unique Farmland

14 In 1980, the Council on Environmental
15 Quality (CEQ) directed federal agencies to
16 assess the effects of their actions on farmland
17 soils classified as prime or unique by the
18 United States Department of Agriculture,
19 Natural Resource Conservation Service
20 (NRCS). Prime farmland is defined as soil
21 that particularly produces general crops such
22 as common foods, forage, fiber, and oil seed
23 and is available for these uses; and unique
24 farmland produces specialty crops such as
25 fruits, vegetables, and nuts.

26
27 The NRCS has classified the majority of soils
28 in the park as prime farmlands.^{1.50} No unique
29 farmland has been identified within the
30 Hopewell Culture National Historical Park.
31
32 Potential effects of the proposed alternatives
33 on prime farmland in the park include
34 constructing new facilities and vegetation
35 management treatments. The extent of
36 the effects is related to the amount of land
37 disturbance caused by construction and
38 operation of park facilities and the extent of
39 vegetation management treatments. Under
40 the action alternatives, a maximum of one
41 acre would be converted from prime farmland
42 to building sites and parking areas associated

44 1.50 Natural Resource Conservation Service (NRCS). "Web
45 Soil Survey of Ross County, Ohio." Soil Survey Staff. United
46 States Department of Agriculture. Accessed October 2014,
<http://websoilsurvey.nrcs.usda.gov/>.

1 with new facilities. This represents less than
2 1% of prime farmland in the park and would
3 result in a long-term, negligible, adverse
4 effect. Vegetation management treatment
5 alternatives would be implemented on much
6 of the prime farmland, but the alternatives
7 would not affect the classification of the areas
8 because their capability to produce common
9 foods, forage, fiber, and oil seed would not be
10 diminished.

11
12 Overall, the proposed alternatives would
13 at most result in local long-term negligible
14 adverse effects on prime farmland. Because
15 effects would be negligible, this topic was
16 dismissed from further analysis.

18 Threatened and Endangered Species

19 Federally threatened and endangered species
20 are protected under the Endangered Species
21 Act of 1973, as amended (16 USC 1531 et
22 seq.) (ESA). Section 7 of the ESA requires
23 federal agencies to promote the conservation
24 purposes of the ESA and to consult with the
25 USFWS to ensure that effects of actions they
26 authorize, fund, or carry out are not likely to
27 jeopardize the continued existence of listed
28 species or species proposed for listing.

29
30 The USFWS lists six federally endangered
31 species as having the potential to be affected
32 by projects in Ross County, the county in
33 which the park is located.^{1.51} The listed species
34 are Indiana bat (*Myotis sodalis*), clubshell
35 mussel (*Pleurobema clava*), northern
36 riffleshell (*Epioblasma torulosa rangiana*),
37 snuffbox mussel (*Epioblasma triquetra*), rayed
38 bean mussel (*Villosa fabalis*), and running
39 buffalo clover (*Trifolium stoloniferum*). The
40 USFWS also lists two species of concern
41 as potentially present in Ross County

43 1.51 U.S. Fish and Wildlife Service (USFWS). "Ohio, Federally-
44 Listed Threatened, Endangered, Proposed, and Candidate
45 Species' County Distribution, Revised December 2014."
46 Accessed January 2015. [http://www.fws.gov/midwest/
Endangered/lists/pdf/OhioSppList2014.pdf](http://www.fws.gov/midwest/Endangered/lists/pdf/OhioSppList2014.pdf)

1 – eastern hellbender (*Cryptobranchus*
2 *alleganiensis alleganiensis* (Daudin)) and
3 timber rattlesnake (*Crotalus horridus*). Bald
4 eagle (*Haliaeetus leucocephalus*) is listed as
5 protected under the Bald and Golden Eagle
6 Protection Act. The northern long-eared bat is
7 a species impacted by white-nose syndrome,
8 and due to recent declines, the USFWS
9 proposed listing this bat as endangered on
10 October 2, 2013.^{1.52} The comment period on
11 the proposed 4(d) rule relating to the listing
12 expired on July 1, 2015.

13
14 Based on relevant studies, park resource data,
15 and staff knowledge, NPS has determined
16 that suitable habitat is not present in the
17 park for clubshell mussel, northern riffleshell,
18 snuffbox mussel, rayed bean mussel, or
19 eastern hellbender because suitable aquatic
20 habitat is not present in the park units.
21 Because of the lack of suitable habitat and
22 because the proposed alternatives would
23 be limited to terrestrial areas, the proposed
24 alternatives would have no effect on federal
25 threatened or endangered aquatic species.
26 The project would also have no effect on
27 timber rattlesnake because habitat for the
28 timber rattlesnake was not found within park
29 boundaries during a herpetological study
30 conducted in 2002-2003.^{1.53}

31
32 Although within the habitat range of Indiana
33 bat and running buffalo clover, the species
34 have not been documented in the park.
35 Because they are not known to occur in
36 the park, despite a number of surveys, it is
37 unlikely Indiana bat and running buffalo
38 clover are present in the park and the
39 proposed alternatives would at most have an
40 insignificant and discountable effect on the

41
42 1.52 78 Fed. Reg. 191.
43 1.53 Christina Wieg. *A Herpetofaunal Inventory of Hopewell*
44 *Culture National Historical Park, Ross County, Ohio.*
45 *Technical Report NPS/HTLN/P6514020002.* (Republic,
46 MO: Heartland Network Inventory and Monitoring
Program, National Park Service, 2004).

1 species. Bald eagles have been documented
2 within the park units, but it is not likely the
3 proposed treatments would have an adverse
4 effect on bald eagles.

5
6 A bat inventory conducted in the park
7 documented the occurrence of northern
8 long-eared bat at the park.^{1.54} This species
9 has been described as roosting and having
10 their young in association with forest trees,
11 either in the foliage, in cavities, or under
12 loose bark. The population of the bat has
13 primarily declined due to the white-nose
14 syndrome disease.^{1.55} To avoid inadvertently
15 harming individuals or roost sites, tree
16 removal would be completed during the
17 hibernation period of northern long-eared
18 bat (November 1 to March 1). If removal of
19 trees between November 1 and March 1 is
20 not feasible, surveys for the species would
21 be completed before trees are removed.
22 Removing trees during the hibernation period
23 and surveying trees before removal outside
24 of the hibernation period would reduce the
25 likelihood of harming individual bats. At
26 most the proposed alternatives would affect
27 a small fraction of the 244 acres of wooded
28 habitat in the park and the thousands of acres
29 of habitat in the region.^{1.56} For these reasons,
30 the proposed alternatives would not likely
31 adversely affect northern long-eared bat and
32 would not contribute to further declines in
33 the population.

34
35 Due to a lack of habitat for aquatic species;
36 likely absence from the park of Indiana bat,

37
38 1.54 Lynn W. Robbins. *Inventory of Distribution, Composition,*
39 *and Relative Abundance of Bats at Hopewell Culture*
40 *National Historical Park.* (Republic, MO: Heartland
41 Network Inventory and Monitoring Program, National
42 Park Service, 2005).

42 1.55 78 Fed. Reg. 191
43 1.56 David D. Diamond, Lee F. Elliott, Michael D. DeBacker,
44 Kevin M. James, Dyanna L. Pursell, and Alicia Struckhoff.
45 *Vegetation Classification and Mapping of Hopewell Culture*
46 *National Historical Park, Ohio. Natural Resource Report*
NPS/HOCU/NRR—2014/793. (Fort Collins, CO: National
Park Service, 2014.)

1 bald eagle, and running buffalo clover; and
2 measures that would be undertaken to avoid
3 and minimize impacts to northern long-eared
4 bat and its habitat, the proposed alternatives
5 would have at most an insignificant and
6 discountable effect on federally listed and
7 candidate species. The USFWS concurred with
8 the NPS effects determination in a letter dated
9 February 25, 2015. For this reason this impact
10 topic was dismissed from further evaluation.

11 Water Resources and Wetlands

12 The Clean Water Act, EO 11990 Wetland
13 Protection, NPS Management Policies 2006,
14 and DO 77-1 direct that water resources and
15 wetlands be protected, and that wetlands
16 and wetland functions and values be
17 preserved. These orders and policies further
18 stipulate that direct or indirect impacts
19 to wetlands be avoided when practicable
20 alternatives exist. When an alternative is
21 selected for implementation that will result
22 in adverse impacts on wetlands, a wetland
23 statement of findings must be prepared
24 that documents the extent and functions of
25 impacted wetlands, why wetland impacts
26 are unavoidable, what measures were taken
27 to minimize impacts, and how impacts will
28 be compensated. Some types of activities
29 are exempted from the requirement for a
30 wetland statement of findings, including foot
31 trails with the primary purpose of public
32 education, interpretation, or enjoyment of
33 wetland resources and where total wetland
34 impacts from placement of fill material does
35 not exceed 0.10 acre.

36
37
38 Although not in the units themselves, each
39 earthwork complex is located in the Scioto
40 River watershed on floodplains near the
41 Scioto River or North Paint Creek or Paint
42 Creek, tributaries to the Scioto River. Within
43 the park units, Dry Run, an intermittent
44 stream is located at Hopeton Earthworks, a
45 man-made pond and ephemeral drainage at
46 Hopewell Mound Group, and five vernal pools

1 of wetland vegetation, each less than 30 feet
2 in diameter at Hopewell Mound Group.

3
4 None of the proposed alternatives would
5 affect the drainages or wetlands in the park
6 or rivers adjacent to the units. In the unlikely
7 event work would occur near the drainages or
8 wetlands, buffer zones would be established
9 around these areas for all action alternatives
10 to prevent disturbance from implementing
11 treatment alternatives. Because the buffer
12 zones would ensure that the alternatives
13 would have no impact on wetlands, this topic
14 was dismissed from detailed discussion in
15 this CLR / EA.

16 Floodplains

17 EO 11988, "Floodplain Management" requires
18 an examination of impacts on floodplains and
19 potential risks involved in placing facilities
20 within floodplains. NPS Management Policies
21 2006 and DO-77-2: Floodplain Management
22 provide guidelines for proposed actions in
23 floodplains.

24
25
26 With the exception of High Bank Works, parts
27 of each of the park units are located in a
28 FEMA-mapped 100-year floodplain. Although
29 floodplains are present, the proposed
30 alternatives do not include constructing
31 new permanent structures or discharging
32 fill material into the floodplain and so would
33 have no impacts on existing floodplains.

34
35 The action alternatives would also have no
36 impacts on natural floodplain values (e.g.,
37 river processes or aquatic habitat) and the
38 ability of the floodplains within the park
39 to function naturally. There would be no
40 increase in risk to life or property. Because
41 there would be no impacts on floodplains,
42 this impact topic was dismissed from further
43 analysis in this CLR / EA.

1 Cultural Resources

2 Indian Trust Resources

3 Secretarial Order 3175 requires that
4 any anticipated impacts to Indian trust
5 resources from a proposed project or action
6 by Department of the Interior agencies
7 be explicitly addressed in environmental
8 documents. The federal Indian trust
9 responsibility is a legally enforceable
10 fiduciary obligation on the part of the
11 United States to protect tribal lands, assets,
12 resources, and treaty rights. The order
13 represents a duty to carry out the mandates
14 of federal law with respect to American
15 Indian and Alaska Native tribes. None of
16 the park units is an Indian trust resource
17 according to this definition. In addition, any
18 Indian titles to such lands now within the
19 park have been extinguished through cession
20 or sale. Therefore, Indian trust resources was
21 dismissed as an impact topic.

22
23 Ethnographic Resources

24 Ethnographic resources are defined by the
25 NPS as “subsistence and ceremonial locales,
26 structures, objects, and rural and urban
27 landscapes assigned cultural significance
28 by traditional users.” An ethnographic study
29 conducted by the park did not identify any
30 current ethnographic resources or uses of
31 the park units. No specific issues related
32 to ethnographic resources were identified
33 during scoping or during consultation with
34 the tribes contacted for this CLR / EA. No
35 specific issues related to ethnographic
36 resources have been identified in past
37 consultations for actions in the park or as
38 of the date of this publication. If subsequent
39 issues or concerns are identified, appropriate
40 consultations would be undertaken.
41 Because it is unlikely that ethnographic
42 resources would be affected by the preferred
43 alternative, and because appropriate steps
44 would be taken to protect any ethnographic
45 resources that are inadvertently discovered,
46 ethnographic resources was dismissed as an
47 impact topic.

1 Museum Collections

2 Museum collections include historic
3 artifacts, natural specimens, and archival
4 and manuscript material. These collections
5 may be threatened by fire, vandalism, natural
6 disasters, and careless acts. The preservation
7 of museum collections is an ongoing process
8 of preventative conservation, supplemented
9 by conservation treatment, when necessary.
10 The primary goal is preservation of artifacts
11 in the most stable condition possible to
12 prevent damage and minimize deterioration.

13
14 The proposed alternatives would not affect
15 the current museum objects of the park.
16 The proposed action alternatives may
17 produce new museum accessions, including
18 archeological objects, during any limited
19 earthwork associated with the proposed
20 alternatives. These new accessions would
21 likely have minor beneficial contributions to
22 the understanding of the park’s natural and
23 cultural resources. Because the effects on
24 the museum collection would be minor and
25 beneficial, museum collections was dismissed
26 as an impact topic.

27
28 Environmental Justice

29 EO 12898, “Federal Actions to Address
30 Environmental Justice in Minority Populations
31 and Low-Income Populations” requires all
32 federal agencies to incorporate environmental
33 justice into their missions by identifying and
34 addressing the disproportionately high and
35 adverse human health or environmental
36 effects of their actions on minorities and low-
37 income populations and communities.

38
39 No actions in the proposed alternatives
40 would have disproportionate health or
41 environmental effects on minorities or
42 low-income populations or communities as
43 defined in the EPA’s “Draft Environmental
44 Justice Guidance” (July 1996); therefore,
45 environmental justice was dismissed as an
46 impact topic.

1 *Soundscapes*

2 An important part of the NPS mission
3 is preservation of natural and cultural
4 soundscapes associated with national park
5 units as indicated in NPS Management
6 Policies 2006 and DO – 47: Sound
7 Preservation and Noise Management. Natural
8 soundscapes exist in the absence of human-
9 caused sound and is the aggregate of all
10 natural sounds within the park. Cultural
11 soundscapes include sounds that are
12 fundamental to the purposes and values for
13 which a park was established. Examples of
14 cultural sounds include native drumming;
15 music; and bands, cannon fire, or other
16 military demonstrations at some national
17 battlefield parks.

18
19 The park units are located in a patchwork
20 of agricultural areas, dispersed residences,
21 and light industry or public facilities. Visitors
22 would generally expect to hear a mix of
23 natural sounds such as bird calls and insect
24 noises and non-natural sounds such as those
25 from farm equipment, cars and trains, and
26 people. A prison facility is adjacent to the
27 park and visitors to the park can hear a siren
28 from the prison facility 2 to 3 times a day.

29
30 The proposed alternatives, including the
31 no action alternative, include vegetation
32 management treatments that would require
33 the use of motorized equipment such as
34 tractors, saws, and maintenance vehicles.
35 These noises would be of similar character
36 and loudness as noises generated by existing
37 vegetation management activities and
38 activities outside of the park units. Increases
39 in noise that may result from proposed
40 vegetation management treatments would
41 be local and no more than minor because the
42 alternatives do not propose using equipment
43 different than what is currently used and
44 because sound-reducing equipment such as
45 mufflers would be kept in good repair.

46

1 Because effects from the alternatives would
2 be no more than minor, soundscapes was
3 dismissed as an impact topic.

4

5 *Lightscape*

6 In accordance with NPS Management
7 Policies 2006, the NPS strives to preserve
8 natural ambient lightsapes, which are
9 natural resources and values that exist in
10 the absence of human-caused light. The
11 proposed alternatives may result in a minor
12 use of nighttime lighting, specifically at any
13 proposed structures. However, in compliance
14 with NPS policies and design guidelines,
15 potential effects of this lighting would be
16 minimized, resulting in localized and minor
17 adverse effects at most. Only a small area
18 would be affected by any proposed additional
19 lighting and it would have a negligible impact
20 on the night sky. Therefore, lightscape was
21 dismissed as an impact topic.

22

23 Public Health and Safety. The NPS seeks to
24 provide a safe and healthful environment
25 for visitors and employees. Conditions in the
26 park are similar to those of surrounding areas
27 and do not pose unusual threats to public
28 health and safety. None of the proposed
29 alternatives would increase risks to public
30 health and safety because standard best
31 practices would be used during design and
32 construction of new facilities. Because there
33 would be no increased risk to public health
34 and safety, this impact topic was dismissed
35 from further analysis.

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