



Draft Wilderness Study / Environmental Assessment

October 2024



National Park Service
U.S. Department of the Interior

Wupatki National Monument

Draft Wilderness Study / Environmental Assessment

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CONTENTS

Chapter 1: Introduction to the Study and Purpose and Need	1
Introduction and Project Background	1
Wilderness Law and NPS Policy	1
Identification and Designation of Wilderness	2
Previous Wilderness Eligibility Assessment and Determination for Wupatki National Monument	3
Brief Description of the Study Area	3
Management Zoning at Wupatki National Monument.....	6
Purpose and Need for the Wilderness Study	6
Purpose of the Study.....	6
Need for the Study.....	6
Issues Analyzed in this Study	7
Implications of Managing Lands Proposed for Wilderness Designation	7
Chapter 2: Wilderness Proposal and Alternatives	11
Introduction.....	11
Eligible Wilderness Lands as Described in the 2022 Wilderness Eligibility Determination	11
Descriptions of Individual Study Areas	12
Study Area 1: Old Weather Station Site	14
Study Area 2: North Entrance Overview Zone	14
Study Area 3: North Road	14
Study Area 4: Lomaki Pueblo Extended Learning Zone.....	14
Study Area 5: Mesa Well Road	15
Study Area 6: Crack-In-Rock Road.....	15
Study Area 7: Northernmost Portion of “the Chimney”	16
Study Area 8: Cattle Crossing Area	16
Study Area 9: Confluence of Deadman Wash and Little Colorado River	17
Study Area 10: Woodhouse Mesa and Visitor Center Administrative Area	17
Study Area 11: Wupatki Pueblo Extended Learning Zone.....	18
Study Area 12: Old Sewage Lagoons.....	19
Study Area 13: Heiser Spring Restoration Area	19
Study Area 14: New Heiser Administrative Area	19
Study Area 15: Former Residence and Access	20
Study Area 16: South Entrance Overview Zone	20

Process and Factors Used to Evaluate Wilderness and Determine the Wilderness Proposal	21
Concept Descriptions for Alternatives.....	23
Alternative A: No Action (Continue Current Management).....	24
Alternative B: NPS Proposed Action (Preferred Alternative)	27
Alternative C	31
Alternative D.....	34
Comparison of Alternatives By Study Area	37
Mitigation Measures and Best Practices.....	45
Chapter 3: Affected Environment and Environmental Consequences	49
Wilderness Character: Natural Quality	49
Affected Environment	49
Impacts on Natural Quality of Wilderness Character	52
Wilderness Character: Undeveloped Quality	58
Affected Environment	58
Impacts on Undeveloped Quality of Wilderness Character	62
Wilderness Character: Other Features of Value (Cultural Resources)	65
Affected Environment	65
Impacts on Other Features of Value (Cultural Resources)	67
Chapter 4: Consultation and Coordination	77
Agencies and Groups Consulted and Coordinated with During Wilderness Study Development	77
National Park Service Preparers and Consultants	78
Flagstaff Area National Monuments	78
Interior Unified Regions 6, 7, and 8.....	78
NPS Denver Service Center Planning Division	78
NPS Washington Support Offices	79

Appendix A: 2013 Wilderness Eligibility Assessment	A-1
Appendix B: 2022 Wilderness Eligibility Determination	B-1
Appendix C: Other Areas Considered during This Wilderness Study	C-1
Appendix D: Alternatives Considered but Dismissed	D-1
Appendix E: Management Zoning and Applicable Desired Conditions per the 2022 Backcountry Management Plan	E-1
Appendix F: Images of Study Areas.....	F-1
Appendix G: Large-Scale Maps	G-1
Appendix H: Relationship to Other Wupatki National Monument Planning Documents	H-1
Appendix I: Issues and Impact Topics Considered but Dismissed From Detailed Analysis	I-1
Appendix J: Selected References.....	J-1

FIGURES

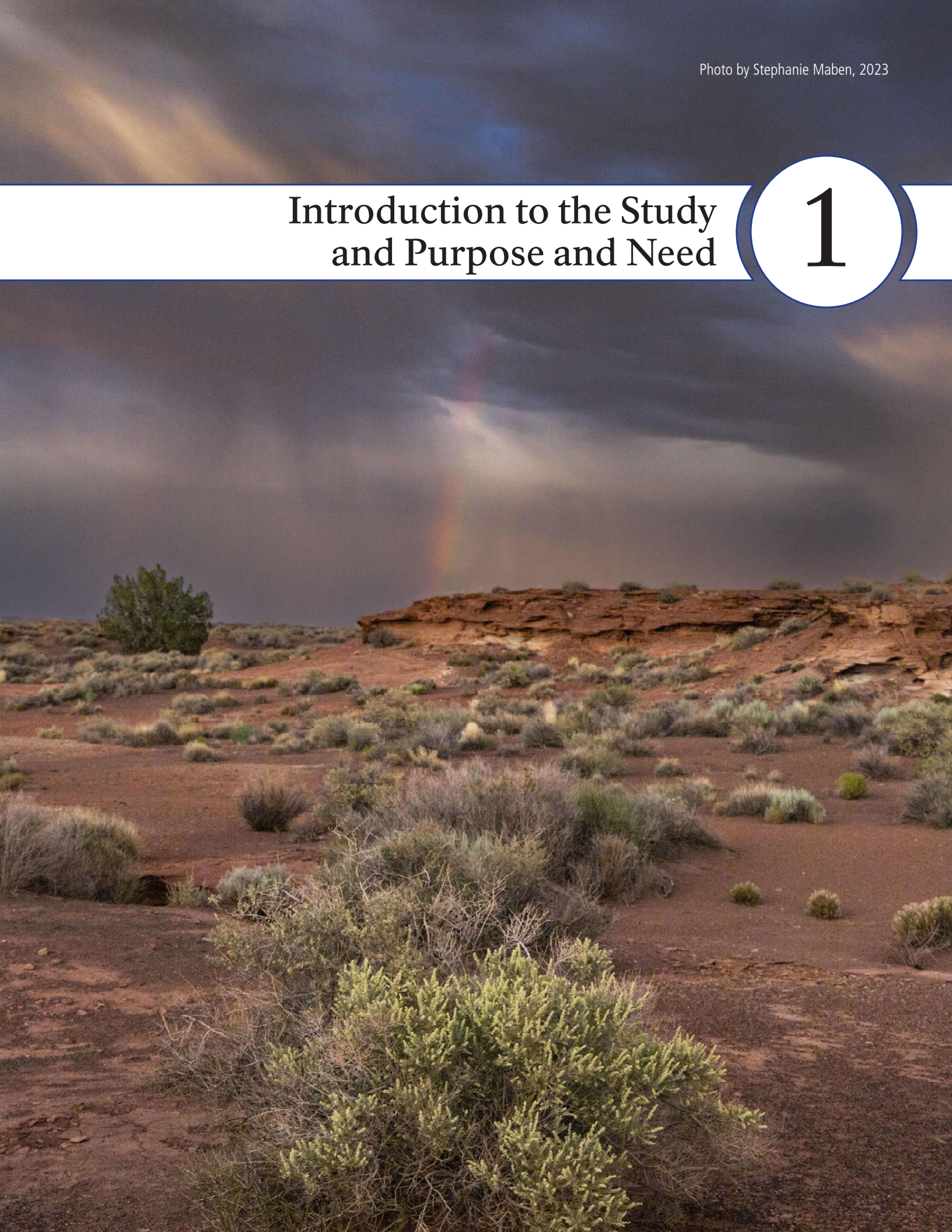
Figure 1. Map of Eligible Wilderness per the 2022 Wilderness Eligibility Determination	5
Figure 2. Map of Wilderness Study Area Locations.....	13
Figure 3. Map of Wilderness Categories in Alternative A: No Action (Continue Current Management)	25
Figure 4. Map of Management Zoning in Alternative A: No Action (Continue Current Management)	26
Figure 5. Map of Wilderness Categories in Alternative B: NPS Proposed Action (Preferred Alternative)	29
Figure 6. Map of Proposed Management Zoning in Alternative B: NPS Proposed Action (Preferred Alternative)	30
Figure 7. Map of Wilderness Categories in Alternative C.....	32
Figure 8. Map of Management Zoning in Alternative C	33
Figure 9. Map of Wilderness Categories in Alternative D.....	35
Figure 10. Map of Management Zoning in Alternative D	36

TABLES

Table 1. Comparison of Alternatives by Study Area: Wilderness Boundaries and Categories	37
Table 2. Comparison of Alternatives by Study Area: Management Zoning.....	43
Table 3. Comparison of Wilderness Categories and Acreages in the Alternatives.....	44
Table 4. Summary of Reasonably Foreseeable Actions Associated with Invasive Plant Control and Native Plant Establishment and Recovery Projects.....	52
Table 5. Development within Eligible Wilderness and Related Planned Actions.....	59
Table 6. Summary of Environmental Impacts Across Alternatives.....	70

Introduction to the Study and Purpose and Need

1



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CHAPTER 1: INTRODUCTION TO THE STUDY AND PURPOSE AND NEED

INTRODUCTION AND PROJECT BACKGROUND

This chapter introduces the wilderness study for Wupatki National Monument (“monument”), which is administered by the National Park Service (NPS) as one of the three Flagstaff Area National Monuments. This wilderness study was developed in accordance with the Wilderness Act of 1964 and relevant NPS policy.

Wilderness Law and NPS Policy

The Wilderness Act (16 United States Code [USC] 1131 et seq.), one of our nation’s landmark pieces of environmental legislation, was passed by Congress in 1964 and signed into law by President Lyndon B. Johnson. With its passage, Congress declared that it is national policy “to secure for the American people of present and future generations the benefits of an enduring resource of wilderness” (section 2[a]). The Wilderness Act of 1964 defined wilderness and established the National Wilderness Preservation System “for the permanent good of the whole people.” The National Wilderness Preservation System consists of the network of wilderness areas managed across four federal agencies, the Bureau of Land Management, the US Fish and Wildlife Service, the US Forest Service, and the National Park Service. Furthermore, the law directs federal land management agencies, including the National Park Service, to manage wilderness areas and preserve wilderness character, though wilderness can be officially designated only through congressional action.

Section 2(c) of the Wilderness Act defines wilderness as “an area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which

- (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable;
- (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation;
- (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and
- (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.”

To support the mandates of the Wilderness Act, the National Park Service developed specific policies to address wilderness management and stewardship, including NPS *Management Policies* 2006, chapter 6, and Director’s Order 41: *Wilderness Stewardship*. *Reference Manual 41: Wilderness Stewardship* expands on this policy and includes other instruction, examples, and recommended practices.

Identification and Designation of Wilderness

The Wilderness Act and NPS policy require the National Park Service to study lands for possible inclusion in the National Wilderness Preservation System and to “manage wilderness areas for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness” (NPS *Management Policies 2006*, 6.1 “General Statement”).

Director’s Order 41; NPS *Management Policies 2006*, sections 6.2 and 6.3; and *Reference Manual 41* describe a step-by-step process for the identification and designation of wilderness.

Director’s Order 41 directs that “Parks with lands possessing wilderness characteristics must complete eligibility assessments to identify lands for possible inclusion in the National Wilderness Preservation System” (NPS 2013b). It explains that an “eligibility assessment is a general evaluation of park lands as a preliminary step” to a wilderness study and that “Lands initially determined to be eligible in the eligibility assessment will be further evaluated in the wilderness study to determine whether they should be proposed by the NPS for designation as wilderness” (Director’s Order 41, section 5.1 “Wilderness Eligibility Assessments”).

Section 5.2 of Director’s Order 41 states that “Formal wilderness studies are used to inform decisions on areas contemplated for wilderness designation.” This policy explains that “The initial determination of eligibility is used as a starting point for the wilderness study” but that “wilderness studies involve a much more intensive review than an eligibility assessment.” In contrast to eligibility assessments, wilderness studies include “field work, the identification of alternatives, . . . analysis of impacts, public involvement and comment.” As a result of this more in-depth analysis, “land identifications made in the eligibility assessment may be changed and may result in more or less land advancing in the wilderness designation process.” Furthermore, “A completed wilderness study may result in revised eligibility determinations” (Director’s Order 41, section 5.2 “Wilderness Studies and Proposed Wilderness”).

National Park Service *Management Policies 2006*, chapter 6, contains similar guidance. Section 6.2.2 directs that “lands and waters found to possess the characteristics and values of wilderness, as defined in the Wilderness Act and determined eligible pursuant to the wilderness eligibility assessment, will be formally studied to develop the recommendation to Congress for wilderness designation.” Additionally, this policy specifies that “Wilderness studies will be supported by appropriate documentation of compliance with the National Environmental Policy Act and the National Historic Preservation Act.” Section 6.2.2.2 explains that “The findings and conclusions of a formal wilderness study will be reviewed by the [NPS] Director, who will then determine which lands will be forwarded to the Department of the Interior (Assistant Secretary’s Office) as ‘proposed’ wilderness.” The policy further states that “The Director’s proposed wilderness will identify park lands that the Director believes the Secretary should recommend for immediate wilderness designation as well as any other lands identified as ‘not proposed’ or as ‘potential’ wilderness” (NPS *Management Policies 2006*, 6.2.2 “Wilderness Studies” and 6.2.2.2 “Proposed Wilderness”).

This wilderness study for Wupatki National Monument was developed to fulfill these legal and policy mandates.

Previous Wilderness Eligibility Assessment and Determination for Wupatki National Monument

The first “preliminary wilderness study” of roadless areas over 5,000 acres in size in Wupatki National Monument was completed in 1971. This early study determined all lands in the monument to be unsuitable for inclusion in the National Wilderness Preservation System. After 1971, subsequent changes for how monument lands were managed and the acquisition of new lands and other developments, including the availability of NPS wilderness management tools and guidance, prompted a need to reexamine wilderness eligibility for lands in the monument.

On March 29, 2013, NPS Director Jonathan Jarvis approved a new wilderness eligibility assessment, which found approximately 34,194 acres of the monument to be eligible for wilderness designation (NPS 2013a).¹ Ever since that 2013 assessment was approved, the National Park Service has managed these lands in accordance with section 6.3.1 of NPS *Management Policies 2006* to preserve wilderness character and ensure that no action is taken that would diminish the eligibility of the area for future wilderness designation.

On July 26, 2022, the National Park Service published a final wilderness eligibility determination in the *Federal Register* (87 FR 44421) that was approved by NPS Director Charles F. Sams III (NPS 2022b). This determination completed the eligibility assessment process and set the stage for this wilderness study for Wupatki National Monument to begin. In keeping with direction contained in Director’s Order 41 and NPS *Management Policies 2006*, this study builds upon the earlier findings and further evaluates monument lands to determine the appropriate recommendation to Congress for wilderness designation. (For more detail about the 1971 preliminary wilderness study, the 2022 eligibility determination and preceding 2013 wilderness eligibility assessment, or other related planning documents, see Appendix H: Relationship to Other Wupatki National Monument Planning Documents.)

BRIEF DESCRIPTION OF THE STUDY AREA

Wupatki National Monument occupies approximately 35,429 acres (nearly 56 square miles) of dry, rugged land approximately 30 miles north of Flagstaff, Arizona, and is characterized by dramatic geologic landforms, climatic extremes, scarce water, and diverse plant and animal species. The wilderness study area includes the entire monument, and, therefore, includes the 34,194 acres that were previously determined to be eligible for inclusion in the National Wilderness Preservation System. The 2022 eligibility determination subdivided these lands into four large “eligible wilderness areas” that were separated from one another by roads and developed areas. This study includes descriptions for each of the four areas in chapter 2.

The interdisciplinary study team identified 16 specific locations that required focused analysis and discussion during the wilderness study. Chapter 2 includes detailed descriptions for each individual study area.

1. Note that due to slight differences in geospatial data available and used between the 2013 eligibility assessment and this study, there are some minor discrepancies in figures for total area. Recent analysis indicates 35,429 acres total within monument boundaries instead of the 35,424 acres cited in the 2013 assessment.

In addition, the study team considered seven other areas that lie outside the established boundaries for eligible wilderness. Current analysis confirmed that these areas do not meet criteria for wilderness eligibility. (Primary eligibility criteria and additional considerations in determining eligibility are identified in NPS policy sections 6.2.1.1 and 6.2.1.2 and are summarized in chapter 2 of this study). Therefore, these areas are not discussed in chapter 2. Appendix C contains brief descriptions for these seven study areas.

The backcountry of Wupatki National Monument, including eligible wilderness, largely consists of undeveloped terrain containing extensive scenic vistas and preserves a setting similar to that experienced by the earliest inhabitants of the area. The monument lands preserve numerous archeological sites on the southwestern Colorado Plateau, dating mostly to the period after the eruption of nearby Sunset Crater Volcano, which occurred around AD 1085. Wupatki National Monument has more than 2,600 archeological sites, with the peak of occupation from approximately AD 1100 to AD 1225. In some locations, there are more than 100 archeological sites per square mile. As described in the monument's foundation document, few places in the world demonstrate such a well-preserved and densely populated archeological landscape that provides a framework for understanding pre-Columbian lifeways (NPS 2015). In addition, the monument exhibits one of the larger intact grasslands and shrubland areas within northern Arizona. The landscape is dominated by native perennial bunch grasses and continues to be the focus of numerous research projects due to its important scientific value as a relatively contiguous extent of native grassland. The monument provides habitat for golden eagles and pronghorn, which is important because this habitat type is diminishing throughout Arizona due to development.

Thirteen associated Native American Tribes recognize the monument lands as part of their ancestral homelands. The cultural resources, natural features, landscape, and plant and animal species found throughout the project area hold continued significance to these traditionally associated groups. Indigenous peoples remain connected to their homelands. Archeologists and researchers continue to learn how generations of inhabitants adapted their ways of life in such a unique and rugged desert environment.

With few impacts from nearby communities, the monument provides an increasingly rare opportunity to view the vast dark night sky and experience natural sounds. Broad vistas of desert grasslands, mesas, buttes, the Painted Desert, and volcanic hills contrast sharply with the San Francisco Peaks, which are visible in the distance across the monument landscape.

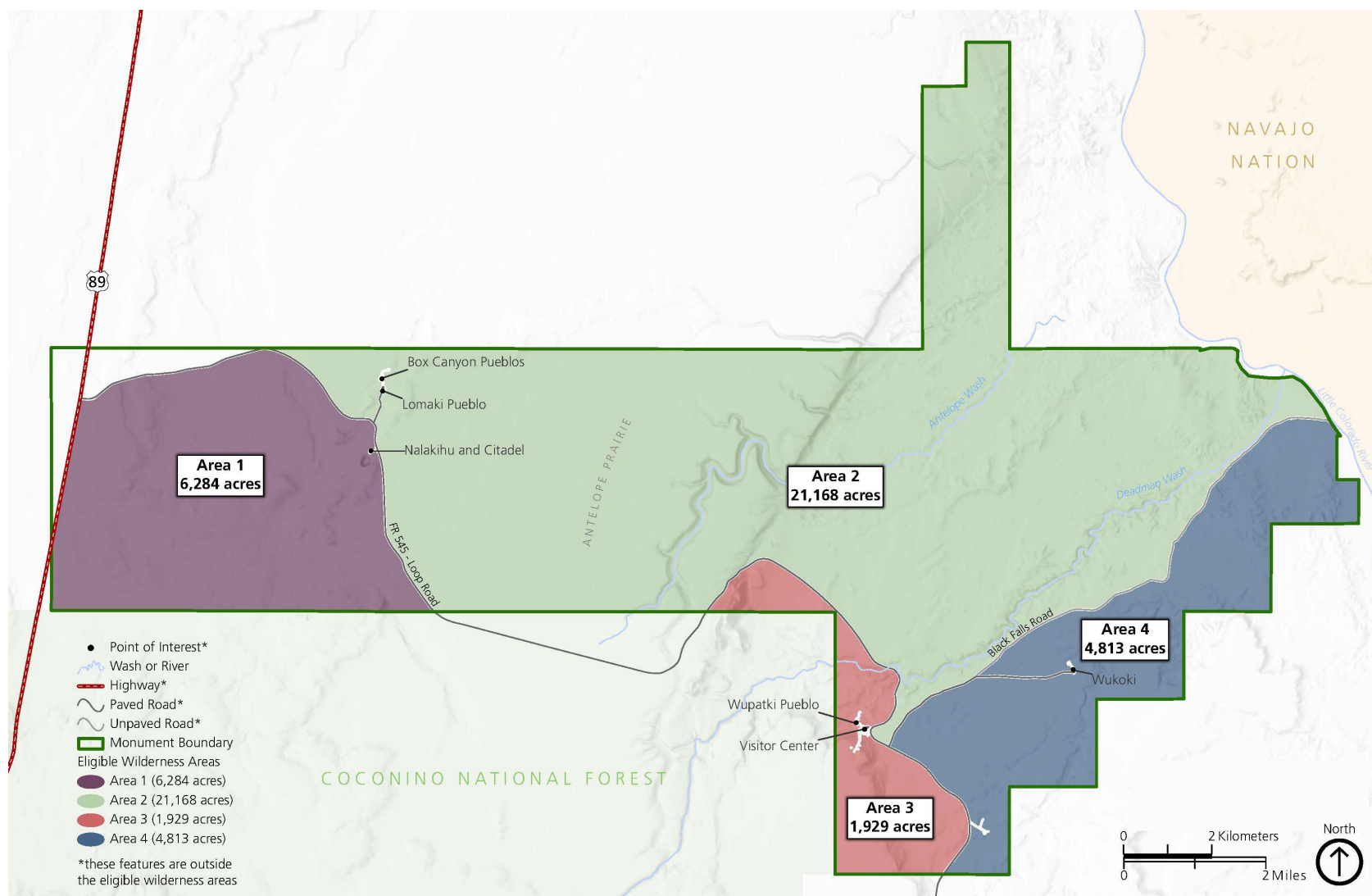


Figure 1. Map of Eligible Wilderness per the 2022 Wilderness Eligibility Determination

Management Zoning at Wupatki National Monument

The 2004 general management plan (GMP) established management zoning for the monument but did not include consideration of wilderness. In 2020, monument staff updated management zoning and desired conditions through a categorical exclusion (entered in the NPS Planning, Environment, and Public Comment, or PEPC, website as Project ID: 96192) to incorporate wilderness considerations and to reflect new and expanded visitor use areas in the monument's backcountry. Across the monument, management zones represent a spectrum from highly developed frontcountry areas that accommodate most administrative and visitor uses to highly remote and natural areas that include large portions of eligible wilderness with minimal or no visitor access. Figure 1, "Management Zoning Under the Selected Alternative," in the *Finding of No Significant Impact for the Wupatki National Monument Backcountry Management Plan/GMP Amendment* (approved April 2022) (NPS 2022a) depicts established management zoning at the start of the wilderness study development. (Appendix E of this study includes a copy of this map and full descriptions of the management zones.) This wilderness study considers minor changes to the boundaries of three management zones that overlap with eligible wilderness—the administrative zone, overview zone, and resource preservation zone—to better align management with NPS wilderness stewardship policy.

PURPOSE AND NEED FOR THE WILDERNESS STUDY

Purpose of the Study

The purpose of this wilderness study is to formally study and solicit public input on eligible wilderness lands at Wupatki National Monument to determine which lands the National Park Service could propose for congressional designation as wilderness. The study also determines which lands are ineligible and should be released from management requirements in NPS wilderness stewardship policy.

Need for the Study

The study is needed to refine the monument's eligible wilderness boundaries as the required next step in the wilderness identification and designation process described in NPS policy (NPS *Management Policies 2006*, sections 6.2 and 6.3, and Director's Order 41: *Wilderness Stewardship*, section 5). Largely undeveloped and unmarred by traces of modern society, Wupatki National Monument includes approximately 34,194 acres of eligible wilderness that protect the qualities of wilderness character, including the abundant archeological record within the monument's boundaries. This study is needed to identify which lands should continue towards wilderness designation for the continued preservation of wilderness character at Wupatki National Monument and which lands should be released from further consideration and management as wilderness per NPS policy. Additionally, the study is needed to determine necessary updates to management zoning to better align with NPS policy for wilderness stewardship.

ISSUES ANALYZED IN THIS STUDY

Consistent with policy and regulations,² the National Park Service used civic engagement and interdisciplinary team discussions to identify important issues to be analyzed in detail in this document and to identify those issues that could be eliminated from further study. Consistent with this guidance, the following issues are analyzed in detail and discussed in chapter 3 of this document:

- Wilderness Character
 - Natural quality
 - Undeveloped quality
 - Other features of value (cultural resources)

Also consistent with this guidance, the National Park Service initially considered the following issues, which were later dismissed from detailed analysis as more information became available (appendix I of this document summarizes the reasons why they were not retained for detailed analysis):

- Wilderness Character
 - Untrammeled quality
 - Solitude or primitive and unconfined recreation

IMPLICATIONS OF MANAGING LANDS PROPOSED FOR WILDERNESS DESIGNATION

In accordance with NPS policy (NPS 2006), the lands included in the 2013 eligibility assessment have been managed consistent with the requirements of Director's Order 41 and chapter 6 of *NPS Management Policies 2006* (NPS 2006) to, among other things, preserve wilderness character since 2013. This means that management actions within the eligible wilderness already must follow rules and regulations required by the 1964 Wilderness Act (in addition to the Organic Act and other relevant laws, regulations, and policies). Monument managers treat these areas differently than nonwilderness areas in that management actions do not employ prohibited uses identified in section 4(c) of the Wilderness Act unless necessary. To determine whether a prohibited use or other actions that have the potential to impact wilderness resources or values are *necessary* to meet the minimum requirements to administer the area as wilderness, the National Park Service is directed to conduct a minimum requirements analysis (MRA) (Director's Order 41, section 6.4; *NPS Management Policies 2006*, section 6.3.5). For example, instead of using motor vehicles and other mechanized equipment, NPS staff typically hike in and hike out to access eligible wilderness areas and use hand tools for repair and restoration efforts.

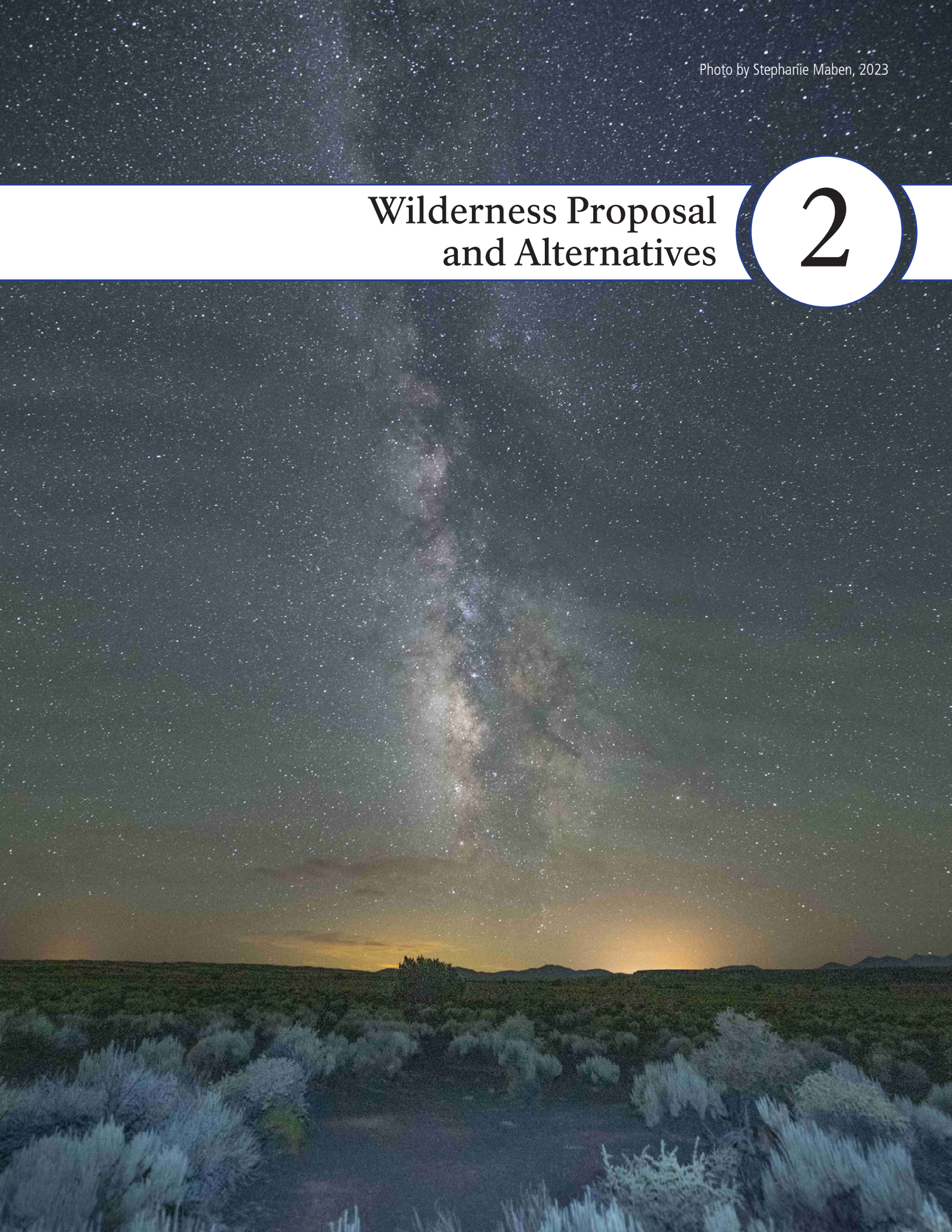
Going forward, the National Park Service will manage monument lands that are proposed for wilderness designation through this study consistent with the same policies and in a similar way

2. *NPS Management Policies 2006*, section 1.7; NPS Director's Order 75a: *Civic Engagement and Public Involvement*; and guidance in section 4.2.E of the 2015 NPS NEPA Handbook.

as the eligible wilderness lands that have been managed since 2013, with an expectation of eventual wilderness designation by Congress. Any lands this study does not propose for wilderness would be described in a revised eligibility determination that would be published in the *Federal Register*. These lands would then be released from requirements under NPS wilderness stewardship policy, would no longer be subject to the MRA process, and thereafter would be managed according to the NPS Organic Act and all other laws, executive orders, regulations, and policies applicable to *nonwilderness* areas of the national park system (Director's Order 41, section 5.2).

Wilderness Proposal and Alternatives

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CHAPTER 2: WILDERNESS PROPOSAL AND ALTERNATIVES

INTRODUCTION

This chapter includes a description of the alternatives being considered that would support meeting the purpose and need for the wilderness study as described in chapter 1. To inform the alternatives, this chapter includes detailed descriptions of the entire study area, including key locations examined in depth.

The wilderness study involves a formal study of all areas previously determined to be eligible for inclusion in the National Wilderness Preservation System. This chapter describes alternatives for all eligible lands and for the 16 individual study areas described below. This study includes the no-action alternative (alternative A) and three action alternatives (alternatives B, C, and D). The no-action alternative would continue current management and provide a basis for comparing the other alternatives. Alternative B is the NPS proposed action and preferred alternative. The alternatives also consider updates to management zoning where necessary.

ELIGIBLE WILDERNESS LANDS AS DESCRIBED IN THE 2022 WILDERNESS ELIGIBILITY DETERMINATION

The 2013 wilderness eligibility assessment and 2022 wilderness eligibility determination found that approximately 34,194 acres of land (96.5% of the monument's 35,424 total acres) met eligibility criteria for the National Wilderness Preservation System and that approximately 1,230 acres (3.5% of the monument's total acreage) were ineligible.³ Eligible lands were subdivided into four large areas, separated from one another by roads (e.g., FR 545 [also known as the Loop Road], Wukoki Road, Black Falls Crossing Road) and developed areas (see figure 1 in chapter 1). The following descriptions of these four areas are copied directly from the 2022 eligibility determination. Note that acreage figures listed here are approximate and reflect analysis from 2011 to 2013.

- **Eligible Wilderness Area 1:** 6,284 acres. This area contains outstanding grassland resources with some juniper savanna in the eastern portions. The landscape is dominated by basalt mesas and offers prime habitat for pronghorn antelope. The area is largely undeveloped and retains most of its primeval character. Wilderness Area 1 is protected and managed to protect pronghorn habitat and sensitive cultural resources. The western-most portion of this area is affected by the presence of Highway 89, but it is still eligible to be designated as wilderness.
- **Eligible Wilderness Area 2:** 21,168 acres. Almost the entire area is undeveloped, with few signs of people and one rarely used administrative road (Crack-In-Rock Road). This area generally appears to be affected primarily by natural forces. The area offers a variety

3. Note that due to slight differences in geospatial data available and used between the 2013 eligibility assessment and this study, there are some minor discrepancies in figures for total area. Recent analysis indicates 35,429 acres total within monument boundaries instead of the 35,424 acres cited in the 2013 assessment.

of habitats including intact grassland, juniper savanna, and cold desert scrub, and is bisected by a prominent geologic feature known as the Doney monocline. The monocline contains deeply incised washes including Antelope Wash, and outstanding views of the Painted Desert, Little Colorado River valley to the north and east, and the San Francisco Peaks to the south. Spectacular features found in this area include red formations of Moenkopi sandstone and areas such as Deadman Wash, which extends from well south of the monument around the north side of the San Francisco Peaks, stretching to the Little Colorado River.

- **Eligible Wilderness Area 3:** 1,929 acres. Wilderness Area 3 surrounds Wupatki's primary interpretive feature, the Visitor Center, and the housing area. Some development has occurred within this area to support monument operations; however, it is confined to the Wupatki Visitor Center area and on top of Woodhouse Mesa. One above ground utility line runs to Woodhouse Mesa, however, as the monument strives to become more energy efficient and self-sufficient, it will pursue removing the above ground line. The rest of the area consists of Doney Mountain and Deadman Wash. Although this wilderness area is less than 5,000 acres, this area can be managed as wilderness because the landscape is homogenous with the surrounding eligible wilderness areas but is bisected by the primary road that goes through Wupatki. This area has many locations not affected by modern development and the potential for seclusion exists in Wilderness Area 3. The area outside of the administrative zones is undeveloped and is affected primarily by natural forces.
- **Eligible Wilderness Area 4:** 4,813 acres. This area contains outstanding Moenkopi sandstone outcrops and deep washes. The landscape is dominated by basalt mesas and offers prime locations for isolation and quiet. The area is largely undeveloped and retains most of its primeval character except for an interpretive pueblo site with associated parking area and access road (Wukoki Pueblo), a small administrative area used for maintenance activities (New Heiser), and a special use permit residence with associated road access. At the expiration of the special use permit for the residence, the area will be rehabilitated to restore natural conditions (NPS 2022b).⁴

DESCRIPTIONS OF INDIVIDUAL STUDY AREAS

The interdisciplinary team identified 16 key locations that required focused analysis and discussion during the wilderness study process (see figure 2). Most of these key locations fall within the 4 eligible wilderness areas described above, but some of these individual study areas also include adjacent lands lying outside eligible wilderness.

4. Since the wilderness eligibility assessment was completed, this special authorization has expired. These lands are included in this study as part of study area 15. The National Park Service would complete compliance with section 106 of the National Historic Preservation Act before restoring natural conditions.

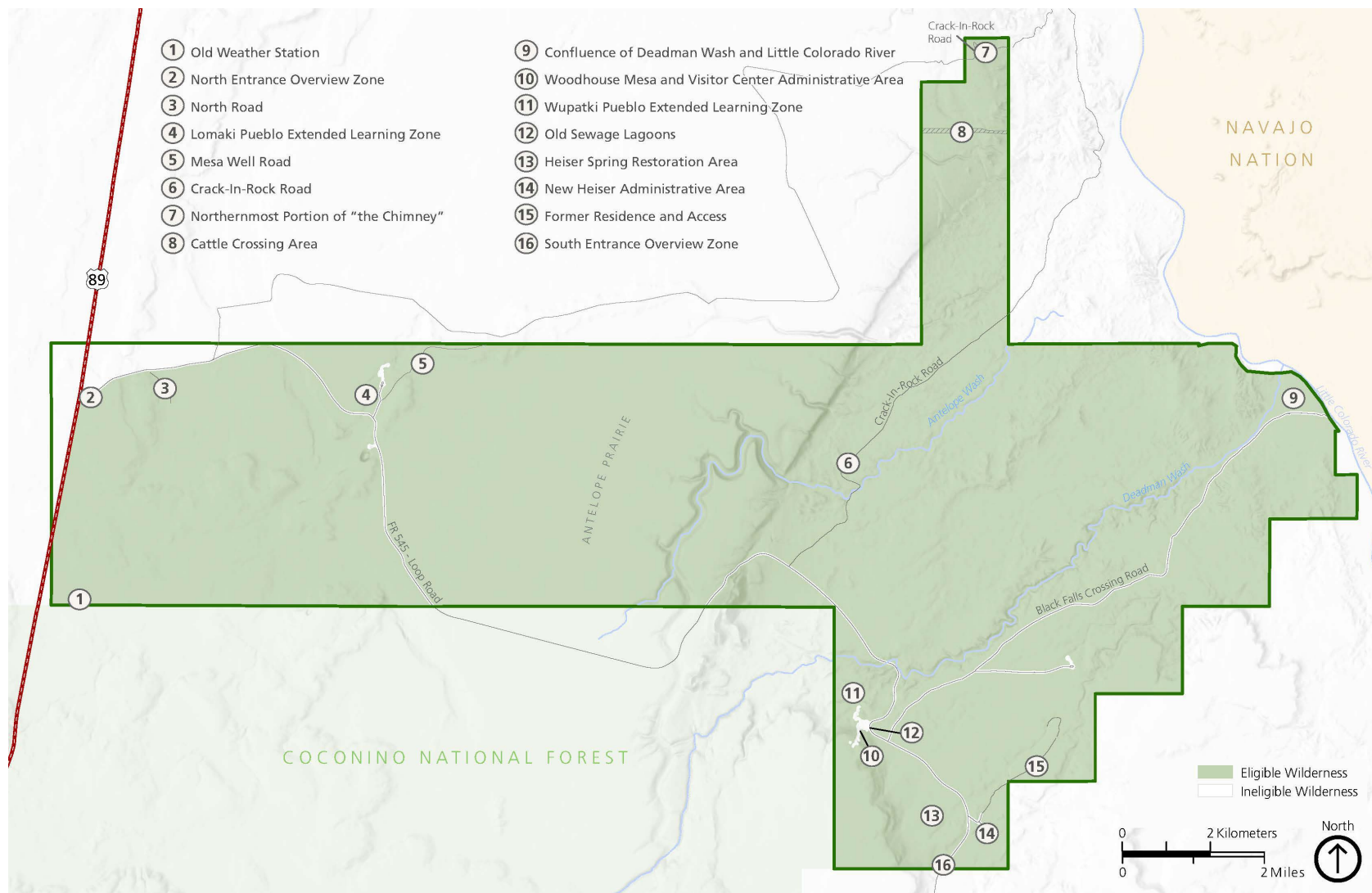


Figure 2. Map of Wilderness Study Area Locations

Study Area 1: Old Weather Station Site

This area is within the resource preservation zone and is included within eligible wilderness, at the very southern edge of area 1.

The site of an abandoned weather station lies in the southwestern corner of the monument, on the east side of US Route 89. The site includes five T-posts, four steel survey stakes (1 inch each), a 3-foot by 3-foot square concrete pad, and a 4-inch by 4-inch wooden post. Monument staff intend to remove this modern infrastructure and restore the area to natural conditions. The time line for this restoration project has not been finalized, but monument staff anticipate that restoration should be complete within five years.

Study Area 2: North Entrance Overview Zone

The southern portion of the zone overlaps eligible wilderness (eligible area 1), while the northern portion of the zone lies outside the established eligible wilderness boundary. The established wilderness boundary parallels FR 545, located 100 feet south of the road's centerline.

The overview zone is a management zone established in the monument's 2004 general management plan. Per the plan, "... orientation and interpretation of primary park themes would be important elements" of the visitor experience in this zone, and "orientation and interpretation facilities, such as visitor centers, kiosks, wayside exhibits, and other interpretive media would be appropriate." The north entrance overview zone lies at the monument's north entrance, where FR 545 intersects with US Route 89. The boundaries for this zone were drawn in the 2004 general management plan as a circle around the entrance into the monument. The north entrance overview zone includes a paved pulloff, with waysides to orient visitors to Wupatki National Monument and interpret monument resources; however, these facilities are located outside eligible wilderness, within the existing 100-foot setback. No permanent improvements exist inside the established boundary for eligible wilderness.

Study Area 3: North Road

North Road lies within the established boundary for eligible wilderness (eligible area 2).

North Road is a faint, narrow, unmaintained, natural-surfaced "two-track" road that intersects with the paved Loop Road (FR 545) in the northwestern portion of the monument. From this junction, the road leads southeast through undeveloped grasslands, curving to the south, approximately 0.43 miles in total length (275.2 acres). National Park Service staff and partners drive on this road to support monument operations and for other purposes. Due to these ongoing administrative uses, the road and a 100-foot setback on either side of the centerline were included in the administrative management zone during the 2020 updates to management zoning.

Study Area 4: Lomaki Pueblo Extended Learning Zone

The majority of this study area lies outside eligible wilderness, but a small section of newly built trail leading to the pueblos now falls within eligible wilderness (eligible area 2).

The Lomaki Trail, which leads to Lomaki and Box Canyon Pueblos, is paved with StaLok and lined with stone. This visitor trail and the interpreted pueblos were intentionally excluded from the eligible wilderness boundary as initially drawn. However, in the years since the 2013 wilderness eligibility assessment, the Lomaki Trail was rerouted to the east to provide universal access. As a result, a small portion of the trail (approximately 85 linear feet) now falls within eligible wilderness. In 2020, the boundary of the extended learning zone was updated (expanded slightly to the east) to include the realigned trail.

Study Area 5: Mesa Well Road

Mesa Well Road lies within the established boundary for eligible wilderness (eligible area 2). This road is abandoned.

Mesa Well Road is a narrow, unmaintained two-track road that branches off the paved Lomaki Road approximately 900 feet south of the Lomaki parking area. From this intersection, Mesa Well Road extends 1.53 miles northeast through an undeveloped grassland to the northern boundary of Wupatki National Monument. The grasslands on either side of the road are within the resource preservation management zone, but the road itself, including a 100-foot setback on either side of centerline, is in the administrative management zone, despite no longer being in use.

The road is a naturally surfaced cinder road and is in poor condition, unmaintained, and no longer necessary for monument operations. Vehicle access to the road is blocked by a cable strung across two posts. Per the NPS definitions for permanent and temporary roads in wilderness in *Reference Manual 41*, Mesa Well Road is no longer categorized as a permanent road. There is no plan to actively rehabilitate the road surface, but through passive restoration, vegetation is beginning to reestablish on the surface of the road. Monument staff anticipate that over time, as the vegetation reestablishes, wilderness character could improve.

Study Area 6: Crack-In-Rock Road

Crack-In-Rock Road lies within the established boundary for eligible wilderness (eligible area 2).

Crack-In-Rock Road is an unmaintained, natural-surfaced two-track road. The road intersects with FR 545 (the Loop Road) approximately 2.5 miles north of the visitor center parking area. From that intersection, Crack-In-Rock Road extends northeast approximately 4.3 miles through the Wupatki Basin to the monument boundary near the base of “the chimney.” (The monument boundary includes a long, rectangular area that extends to the north—monument staff informally know this area as “the chimney” due to its appearance on maps). This study area contains most of Crack-In-Rock Road that is within monument boundaries. An additional short section of the road (0.78 miles) comes back into the monument at the top of “the chimney,” discussed below as part of study area 7.

The road and a 100-foot setback on either side of the centerline are included in the administrative management zone (updated in 2020), but the entire road lies within eligible wilderness (eligible area 2). Additionally, Crack-In-Rock Road marks the boundary between

two other management zones whose boundaries were updated in 2020: the discovery zone to the west and the resource preservation zone to the east.

As part of the administrative zone, the road is closed to the public and only used for NPS administrative or operational purposes. The condition of the road varies, and NPS staff drive the first 1.65-mile segment of the road most often (though still infrequently). In particular, the road plays an important role in supporting the overnight ranger-led hikes to Crack-In-Rock—a popular, NPS-led, experience for visitors. At the 1.65-mile mark, NPS vehicles park, and visitors embark on their guided hike to Crack-In-Rock. Estimated vehicle use of the road is 20 days per year to support cultural and natural resource management activities, resource protection patrols, and eight ranger-led hikes. Past this point, the road is only driven in emergencies and has been driven very infrequently since 2020. The road is gated at the monument boundary. At its southern end, where it intersects FR 545, a locked cable is strung across the road, preventing visitor access.

Section 4(c) of the Wilderness Act prohibits certain uses within wilderness, including permanent and temporary roads, and the use of motor vehicles and motorized equipment (see chapter 1). The entire road in the monument was included within the boundaries of eligible wilderness, prompting additional analysis and discussion during development of the wilderness study.

Study Area 7: Northernmost Portion of “the Chimney”

This study area is included in the established eligible wilderness boundary (eligible area 2).

This area includes the section of Crack-In-Rock Road with 100-foot setbacks on either side of centerline (approximately 18.6 acres) that weaves through the northernmost portion of Wupatki National Monument’s “chimney” and the small portion of the monument to the north of this road (approximately 38.4 acres). The total area of this study area is approximately 57 acres. Portions of this area are within the resource preservation and discovery management zones.

The road connects Babbitt Ranches lands on the east and west of the monument and provides NPS access. A short segment of this road, approximately 0.78 miles in length, is on NPS lands and accommodates NPS and occasional researcher use. Use of this road primarily supports Crack-In-Rock ranger-led hikes and resource management activities. The National Park Service locks the gates on the west and east ends of the road at the monument boundary. This road is essential to support Crack-In-Rock hikes to deliver water and other supplies.

Study Area 8: Cattle Crossing Area

This study area is in eligible wilderness (eligible area 2).

In Wupatki National Monument’s northern “chimney,” Babbitt Ranches uses an area to move cattle east-west across NPS lands from one area of the ranch to another. This use is infrequent and has not occurred in some years, but it could occur in the future. The National Park Service has a memorandum of understanding with Babbitt Ranches that allows for these crossings to continue. The cattle crossing is delineated by two parallel barbed-wire fences running east-west across NPS lands. The fence corridor is approximately 5,290 feet by 243 feet. The fencing has metal T-posts and does not substantially impact the visual character of the natural landscape. A

gate is on the west side, but the east side is open with no boundary fencing or any other infrastructure. Study area 8 is a remote area and is protected and managed to preserve natural and cultural resources as part of the resource preservation management zone.

Study Area 9: Confluence of Deadman Wash and Little Colorado River

The confluence of Deadman Wash and the Little Colorado River is included within the established eligible wilderness boundary (eligible area 2).

This study area is located within the resource preservation management zone, north of Black Falls Crossing Road and southwest of the monument boundary at the Little Colorado River. It includes approximately 140 acres of land where the wash empties into the Little Colorado River.

This area experiences a high presence of nonnative invasive plant species, specifically tamarisk (*Tamarix ramosissima*) and camelthorn (*Alhagi maurorum*), that are rapidly spreading and overtaking native plant communities. Of the 140 acres in this study area, 66 acres have had restoration activities to address these invasive species. The growth of the tamarisk and camelthorn, which have been present for nearly a century, has severely impacted the natural flow and function of the wash. This has led to the area turning into a “sediment cache,” adding layers of soils over the water table and leading to poor soil health. These conditions have made it very challenging for native plants to grow. Due to these impacts, the area has lost much of its natural quality, degrading wilderness character. Once the tamarisk and camelthorn are removed, the National Park Service expects that sediment would be flushed out of the wash into the Little Colorado River, improving the natural flow of the surface water.

Monument staff have undertaken actions considered to be trammeling under NPS wilderness policy to combat the growing invasives and restore the ecosystem, using herbicides and mechanized tools such as chainsaws. Additional actions include planting native cottonwood and willow trees, amending soil, and adding temporary irrigation systems, rebar stakes, tree cages, and galvanized piezometers.

A project to support the restoration of this riparian area and to build a restoration plan for invasive plant removal has been approved through the Inflation Reduction Act of 2022. Therefore, ongoing intensive management activities to address impacts on natural conditions will continue into the foreseeable future.

Study Area 10: Woodhouse Mesa and Visitor Center Administrative Area

A portion of the study area is included within eligible wilderness (eligible area 3), while other areas were previously determined ineligible for wilderness.

This study area includes lands on the top and slopes of Woodhouse Mesa, where modern infrastructure and roads are located, and areas below Woodhouse Mesa, where visitor and administrative facilities are located.

On Top and Slopes of Woodhouse Mesa

Some of these lands are currently in eligible wilderness. While the established eligible wilderness boundary was drawn to exclude two water tanks and a seismograph, it currently includes three access roads and above-ground utility lines.

Modern infrastructure that supports monument operations on top of Woodhouse Mesa includes a US Geologic Survey seismic station, above-ground utility lines, and a radio repeater. Two large water tanks are located on the northern slopes of Woodhouse Mesa, just below its rim. This infrastructure is accessed from Coconino National Forest lands by three roads (vehicular routes), one each leading to the seismograph station (approximately 0.54 miles within the monument's boundaries), the water tanks (approximately 0.59 miles), and along the power line (approximately 0.42 miles). These roads have locks at the NPS boundary. The water tanks, powerline, seismograph, and access routes are all located within the boundaries of the administrative management zone, which was updated in 2020 (see appendix E for management zone descriptions). The purpose and uses of this management zone are not consistent with the preservation of wilderness character.

Below Woodhouse Mesa

Below Woodhouse Mesa, all the major visitor and administrative facilities are located outside the established eligible wilderness boundary.

Areas adjacent to the developments described below are included in this study area—the area northeast of Woodhouse Mesa between the mesa and FR 545, an area to the north of the visitor center and parking area that includes the historic entrance road alignment, and lands west of the housing and administrative area to the monument boundary. These areas include the Wupatki National Monument visitor center, employee housing area, maintenance garage, propane tanks, and miscellaneous sheds and small structures. These facilities are located within two management zones whose boundaries were updated in 2020—the overview management zone, which includes the visitor center and parking, and the administrative zone, which includes the residential area and administrative infrastructure.

Study Area 11: Wupatki Pueblo Extended Learning Zone

A portion of Wupatki Pueblo extended learning zone lies outside the established boundaries for eligible wilderness, but some areas are included within eligible wilderness (eligible area 3).

This study area corresponds to the extended learning management zone that encompasses Wupatki Pueblo and the Wupatki Pueblo Trail. This management zone is located close to the monument visitor center, and its boundaries were updated in 2020. Wupatki Pueblo, which is a 900-year-old Ancestral Puebloan site with over 100 rooms, is the most heavily visited archeological site in the monument. A developed trail featuring a compacted StaLok surface, masonry steps and walls, and concrete curbs and edges provides access. These developed visitor areas were excluded from eligible wilderness; however, the established boundary includes other important features in the extended learning management zone, for example, a portion of the Wupatki Pueblo ballcourt and a road trace of the historic entrance road. The paved Wupatki Pueblo Trail leads to the ballcourt and community room. The alignment of the historic entrance

road is inconspicuous to most visitors, but in the future, this road trace may be minimally improved as a hiking route to support the Kaibab Crossing ranger-led hike (described in the 2022 backcountry management plan as the Kaibab Crossing Discovery Hike).⁵

Study Area 12: Old Sewage Lagoons

The old sewage lagoons are located within the established boundary for eligible wilderness (eligible area 2). This area is included in the administrative management zone.

The monument's old sewage lagoons and surrounding fencing are located to the east of the monument visitor center parking area, across FR 545. The sewage lagoons were officially decommissioned in 2012 and no longer function. In 2020, the administrative management zone was expanded to include the old sewage lagoons and associated access road (approximately 2.8 acres). Monument staff will restore the site of the old sewage lagoons to natural conditions and received funding to begin this project in 2024. Restoration activities include recontouring the site's topography and replanting with native species. Monument staff anticipate that restoration should be complete within the next two years.

Study Area 13: Heiser Spring Restoration Area

The Heiser Spring study area is included within eligible wilderness (eligible area 3).

This area is in the southern portion of the monument, west of FR 545 not far from the New Heiser Administrative Area. This area is included within the resource preservation management zone. Previously, certain uses and conditions in this area did not conform with wilderness, including the presence of concrete and piping at an old NPS spring box; however, these constructed elements have been removed, and the site was restored and replanted with native vegetation. Installations are still present in the area, including five wells and three piezometers for climate change research and water level monitoring, but these installations do not substantially impact the area's wilderness character. These installations are necessary under a minimum requirements analysis for water research and management.

Study Area 14: New Heiser Administrative Area

Currently, a portion of the New Heiser Administrative Area is included in eligible wilderness (eligible area 4). The New Heiser Administrative Area is in the southeastern portion of the monument, close to the monument's southern entrance. This entire study area falls within the boundaries of the administrative zone (updated in 2020) and is not managed to preserve natural character but rather to support monument operations. These uses will continue.

The established boundary for eligible wilderness was drawn to exclude a portion of the New Heiser Administrative Area that is used for administrative and operational uses. Infrastructure located outside of the eligible wilderness boundary includes a maintenance warehouse and

5. In December 2021, the National Park Service released the *Wupatki National Monument Backcountry Management Plan/GMP Amendment/Environmental Assessment*. Following public review and comment on the plan and environmental assessment, a finding of no significant impact was approved in April 2022. This wilderness study therefore refers to the plan as the 2022 backcountry management plan.

adjacent fenced enclosure, the portion of the New Heiser Road that serves the maintenance warehouse and a segment extending approximately 300 feet beyond the building, a paved segment of the Heiser Pueblo Road (approximately 600 feet long) that leads to the northeast, and buried service utilities.

While much of this study area is outside of eligible wilderness, approximately 18 acres are included in the eligible wilderness boundary. These lands are also in the administrative management zone and are used by NPS staff for operational purposes. These lands include borrow/fill piles and other materials, a weather station, old foundations of former employee housing sites, disturbed open areas that are impacted by the occasional use of monument vehicles and equipment, and an adjacent revegetation project. The effects of these recent and ongoing human activities are noticeable on the landscape.

Study Area 15: Former Residence and Access

This study area is included within the established eligible wilderness boundary (eligible area 4).

Located in the southeastern portion of the monument, northeast of the New Heiser Administrative Area, this study area includes an unpaved access road (about 1.6 miles long) and a buried, nonfunctioning waterline that served a former residence. Recently, this area was part of a lifetime authorization for private residence and use of the road for access. The authorization expired in 2022, and the residence is now empty. The road, waterline, and housing site are included in the administrative management zone (updated in 2020), and the remainder of the study area is in the resource preservation management zone.

In the future, the National Park Service intends to restore portions of this site to natural conditions, which may involve the demolition and removal of modern buildings and modern infrastructure. The National Park Service would complete compliance with section 106 of the National Historic Preservation Act and prepare a minimum requirements analysis before removing any buildings or structures. Currently, there are no set plans or time lines for these actions.

Study Area 16: South Entrance Overview Zone

Nearly all the south entrance overview zone is inside the established eligible wilderness boundaries—lands more than 100 feet to the west of the centerline of FR 545 are in eligible area 3, and lands more than 100 feet to the east of the centerline of FR 545 are in eligible area 4.

As with the north entrance overview zone (study area 2), this study area is in the overview management zone, which emphasizes orientation and interpretation facilities. The south entrance overview zone lies at the monument's south entrance, where FR 545 crosses into NPS lands. In the same way as the north entrance overview zone, the boundaries for this zone were drawn in the 2004 general management plan as a circle around the entrance into the monument. The overview zone includes a paved pulloff, with waysides on the east side of FR 545 to orient visitors entering the monument from the south; however, these facilities are located outside eligible wilderness, within the existing 100-foot setback. As with the north entrance overview zone, there are no permanent improvements inside the established boundary for eligible wilderness.

PROCESS AND FACTORS USED TO EVALUATE WILDERNESS AND DETERMINE THE WILDERNESS PROPOSAL

The National Park Service developed the wilderness proposals described in alternatives B and C using a combination of fieldwork, mapping, and interdisciplinary expertise. For each individual study area, NPS staff analyzed existing conditions and evaluated appropriate wilderness categories (e.g., proposed wilderness, potential wilderness, not proposed) and boundaries. During this evaluation, the National Park Service adhered closely to guidance from NPS policy and the Wilderness Act of 1964.

Especially important to the evaluation were the criteria in *NPS Management Policies 2006*, 6.2.1.1 “Primary Eligibility Criteria.” Per this policy, “NPS lands will be considered eligible for wilderness if they are at least 5,000 acres or of sufficient size to make practicable their preservation and use in an unimpaired condition, and if they possess the following characteristics (as identified in the Wilderness Act):

- The earth and its community of life are untrammeled by humans, where humans are visitors and do not remain.
- The area is undeveloped and retains its primeval character and influence without permanent improvements or human habitation.
- The area generally appears to have been affected primarily by the forces of nature, with the imprint of humans’ work substantially unnoticeable.
- The area is protected and managed so as to preserve its natural conditions.
- The area offers outstanding opportunities for solitude or a primitive and unconfined type of recreation.”

The study team also referred to *NPS Management Policies 2006*, 6.2.1.2 “Additional Considerations in Determining Eligibility,” which describes additional considerations in determining eligibility. Not all of these considerations are listed below; however, some that proved pertinent to the evaluation for Wupatki National Monument include the following:

- “A wilderness area may contain significant ecological, geological, or other features of scientific, educational, scenic, or historical value, although it does not need these things to be considered eligible for wilderness designation.
- In the process of determining wilderness eligibility, lands will not be excluded solely because of existing rights or privileges (e.g., mineral exploration and development, commercial operations, agricultural development, grazing, or stock driveways). If the National Park Service determines that these lands possess wilderness character, they may be included in the eligibility determination so that they can be considered for designation as wilderness or potential wilderness.
- Lands containing aboveground or buried utility lines will normally not be considered as eligible for wilderness designation, but they can be considered as eligible for “potential”

wilderness designation if there is a long-term intent to remove the lines. No new utility lines may be installed in wilderness, and existing utility lines may not be extended or enlarged except as may be allowed pursuant to section 1106 of the Alaska National Interest Lands Conservation Act (16 USC 1133[c]).

- Historic features that are primary attractions for park visitors will generally not be recommended as eligible for wilderness designation. However, an area that attracts visitors primarily for the enjoyment of solitude and unconfined recreation in a primitive setting may also contain cultural resource features and still be included in wilderness. Historic trails may serve and be maintained as part of the wilderness trail system, as identified and coordinated within an approved wilderness management plan and the park's cultural resource plan. The presence of historic structures, including archeological sites, does not make an area ineligible for wilderness. A recommendation may be made to include a historic structure in wilderness if (1) the structure would be only a minor feature of the total wilderness proposal; and (2) the structure will remain in its historic state, without development." (NPS 2006)

Director's Order 41, section 5.6, provided guidance for determining appropriate wilderness boundaries relative to natural features and roads: "Wilderness boundaries should be established so they are easily identifiable on the ground. Unless otherwise defined by Congress when the area is designated, the standard boundary setbacks from roads, paved and unpaved, should be 100 feet on land from either side of the centerline." (Director's Order 41, *Wilderness Stewardship*, section 5.6, "Wilderness Boundaries.")

The evaluation also involved a thorough review of the Wilderness Act of 1964, including section 4(c) "Prohibition of Certain Uses," which reads,

Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

The study team also reviewed guidance in *Reference Manual 41*, including definitions for "permanent road" and "temporary road" included in the "Wilderness Definitions" section:

Permanent road: A route constructed, maintained or used by motor vehicles or mechanical transport for an indefinite period of time

Temporary road: A route constructed, maintained or used by motor vehicles or mechanical transport for a finite period of time

CONCEPT DESCRIPTIONS FOR ALTERNATIVES

This wilderness study examines if and where wilderness should be designated within the monument, given the best available current information about wilderness character, public input, and practical considerations. Four alternatives are considered and analyzed in detail, including the no-action alternative and three action alternatives.

Alternative A, the no-action alternative, would continue current management and provides a basis for comparing the other alternatives.

The three action alternatives present different possible configurations for if and where wilderness should be designated within the monument. In accordance with NPS *Management Policies 2006* sections 6.2.2.1 and 6.2.2.2, alternatives B and C identify lands as either “not proposed/ineligible,” “proposed wilderness,” or proposed as “potential wilderness.” Alternative D does not include a wilderness proposal but identifies lands as either “eligible” or “ineligible.” Under all three action alternatives, the National Park Service would update the 2022 wilderness eligibility determination consistent with the more in-depth analysis that was conducted during development of this wilderness study.

Within each alternative, study areas fall into one or more of the following categories:

- **Ineligible/not proposed for wilderness** lands were determined to *not* possess the characteristics of wilderness through the in-depth analysis contained in this wilderness study and, thus, should not be included in a wilderness proposal. Any lands previously determined to be eligible for the National Wilderness Preservation System (through the 2013 assessment and 2022 determination) but not proposed for wilderness in this study would henceforth be determined ineligible and released from wilderness considerations under NPS policy. Thereafter, these lands would be managed under the NPS Organic Act and other laws, executive orders, regulations, and policies applicable to nonwilderness areas of the national park system.
- **Eligible/not proposed for wilderness** lands meet the primary eligibility criteria for wilderness as defined in NPS policy but are not forwarded for wilderness designation. These lands would still be managed as wilderness under NPS policy, as described in chapter 1 of this study.
- **Proposed wilderness** lands possess the tangible and intangible values of wilderness character as defined in the Wilderness Act and NPS policy outlined in chapter 1. These lands are appropriate to be included in a proposal “for immediate wilderness designation” (NPS *Management Policies* 6.2.2.2), pending review by the NPS director.
- **Potential wilderness** lands are adjacent to proposed wilderness that “otherwise merit full wilderness designation” (*Reference Manual 41*, appendix H, “Designating Potential Wilderness as Wilderness” [1999]) but “do not themselves qualify for immediate designation due to temporary nonconforming or incompatible conditions” (NPS policy 6.2.2.1). Per *Reference Manual 41*, these uses or conditions “could include a road, or a structure/installation such as a water pipeline.” (*Reference Manual 41*, appendix H.) These potential wilderness lands are appropriate for future designation as wilderness when the nonconforming use or condition has been removed or eliminated. (For details

on the process for converting potential wilderness to designated wilderness, see NPS *Management Policies* 6.2.2.1 and *Reference Manual* 41, appendix H [1999].)

Alternative A: No Action (Continue Current Management)

Under the no-action alternative, the eligible wilderness identified in the 2022 wilderness eligibility determination would remain the same, and the National Park Service would not pursue a wilderness proposal at this time.

Lands already assessed as eligible for the National Wilderness Preservation System (approximately 34,194 acres or 96.5% of Wupatki National Monument's total acreage) would continue to be managed to preserve eligibility for designation by protecting wilderness character, in accordance with NPS policy (see figure 3). The National Park Service would continue to apply minimum requirements analysis to management decisions affecting eligible wilderness.

Under this alternative, the existing occasional motorized use of roads in eligible wilderness to support monument operations would cease no later than two years after this wilderness study is approved through a signed decision document or until the 2022 eligibility determination is amended through a *Federal Register* notice, whichever occurs first. During this finite period, NPS staff, permitted researchers, and other partners could continue to occasionally drive North Road (study area 3), Crack-In-Rock Road (study areas 6 and 7), and the access road in study area 15 to support guided hikes and resource protection. Additionally, NPS staff and/or utility operators would continue to use the three vehicular routes on the top of Woodhouse Mesa (study area 10) to access and service the seismograph, water tanks, and powerline. Any of these uses, or any other nonconforming uses related to restoration efforts or monument operations within eligible wilderness, would require that monument staff complete a minimum requirements analysis.

Areas that were not already determined to be eligible for inclusion in the National Wilderness Preservation System would not be subject to NPS wilderness stewardship policy and would be managed according to the NPS Organic Act and other laws, executive orders, regulations, and policies applicable to nonwilderness areas of the national park system.

In this alternative, the monument's management zoning, as established in the 2004 general management plan and amended through a 2020 categorical exclusion, would remain the same with no changes. Zoning would remain as shown in figure 1 "Management Zoning Under the Selected Alternative" in the *Finding of No Significant Impact for the Wupatki National Monument Backcountry Management Plan/GMP Amendment* (approved in April 2022) (see appendix E and figure 4 of this wilderness study for management zoning under alternative A).

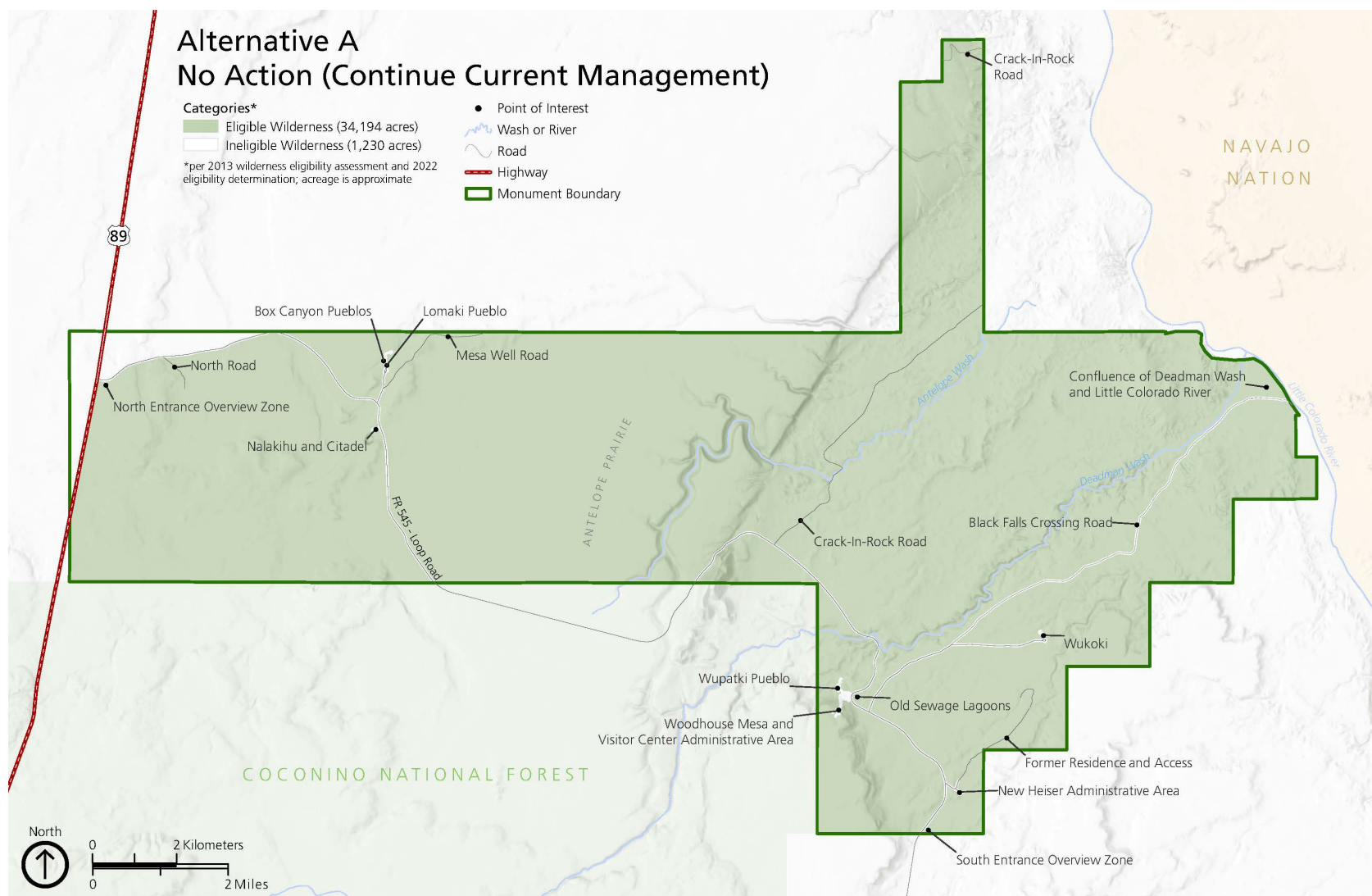


Figure 3. Map of Wilderness Categories in Alternative A: No Action (Continue Current Management)

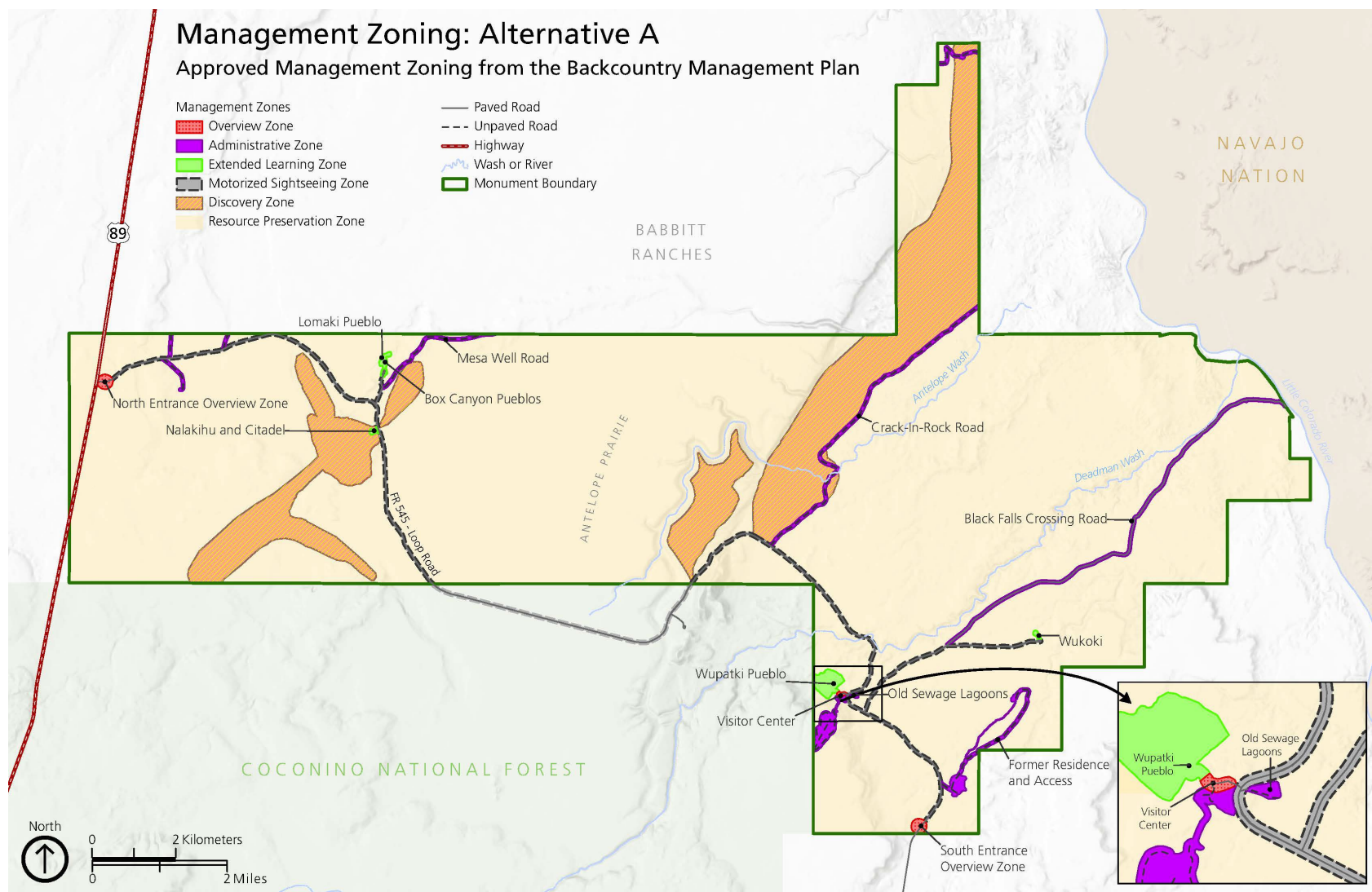


Figure 4. Map of Management Zoning in Alternative A: No Action (Continue Current Management)

Alternative B: NPS Proposed Action (Preferred Alternative)

Alternative B is the proposed action (preferred alternative) and identifies the most lands that would be forwarded to the NPS director for review and transmittal to the secretary of the interior as “proposed” wilderness.

The wilderness proposal in alternative B includes most lands that were previously determined to be eligible; however, the study team analyzed and adjusted the boundaries through in-depth analysis. Alternative B identifies 33,642 acres (or 94.95% of the monument’s total acreage) that would be proposed for immediate wilderness designation. Due to the presence of temporary nonconforming or incompatible conditions that do not qualify lands for immediate designation, 274 acres of land (less than 1% of monument lands) would be proposed as potential wilderness for future designation as wilderness (see figure 5 for proposed wilderness, potential wilderness, and lands that are not proposed for wilderness and determined ineligible in alternative B).

The National Park Service would manage lands that the study identifies as proposed or potential wilderness per NPS wilderness stewardship policy (e.g., *NPS Management Policies 2006*, chapter 6; Director’s Order 41; and *Reference Manual 41*), as well as the NPS Organic Act and all other laws, executive orders, regulations, and policies applicable. The National Park Service would continue to ensure preservation of wilderness character in these areas and would “take no action that would diminish the wilderness eligibility” of lands that possess “wilderness characteristics until the legislative process of wilderness designation has been completed” (*NPS Management Policies 2006*, 6.3.1 “General Policy”). The National Park Service would continue to apply minimum requirements analysis to proposed or potential wilderness.

Alternative B also identifies areas that should not be included in the wilderness proposal (1,513 acres). The 1,513 acres that would not be included in the wilderness proposal include 1,230 acres previously determined ineligible (in the 2022 determination) and 283 acres that were previously determined eligible but, upon further study, do not possess the characteristics of wilderness described in *NPS Management Policies 2006* sections 6.2.1.1 and 6.2.1.2. Should alternative B be selected for implementation, these lands would be determined ineligible and released from management considerations in the NPS wilderness policy. In the future, the National Park Service would manage lands that are not proposed for wilderness (lands determined ineligible) per the NPS Organic Act and other laws and policies applicable to nonwilderness areas of the national park system, per Director’s Order 41, section 5.2. All of the action alternatives would revise the eligibility determination, so the National Park Service would only allow motorized travel on those areas determined *ineligible* for wilderness designation under the revised determination.

A detailed breakdown of the areas identified as proposed wilderness, potential wilderness, or not included in the wilderness proposal (ineligible lands) is presented in table 1. Table 3 includes total acreages for each category.

Additionally, the preferred alternative (alternative B) includes changes to the geographical boundaries of Wupatki National Monument’s established management zoning (see figure 6). These adjustments are needed to better align management with the wilderness proposal. Details regarding changes in management zoning are included in table 2.

Under alternative B, the first 1.65-mile segment of Crack-In-Rock Road from the intersection with FR 545 (Loop Road) would be determined ineligible and would not be proposed for wilderness designation. This stretch of road would remain in the administrative management zone and would continue to be open to motor vehicle use by NPS staff and researchers to support monument operations. The area at the 1.65-mile point of the road is a critical location to support Crack-In-Rock hikes, as vehicles park here and visitors embark on their hike. Beyond the 1.65-mile point, the next 2.65 miles of Crack-In-Rock Road would be closed to all motorized use, left to naturally revegetate without active restoration and would be proposed for wilderness designation. Zoning for this portion of the road would change from being part of the administrative zone to part of the resource preservation zone.

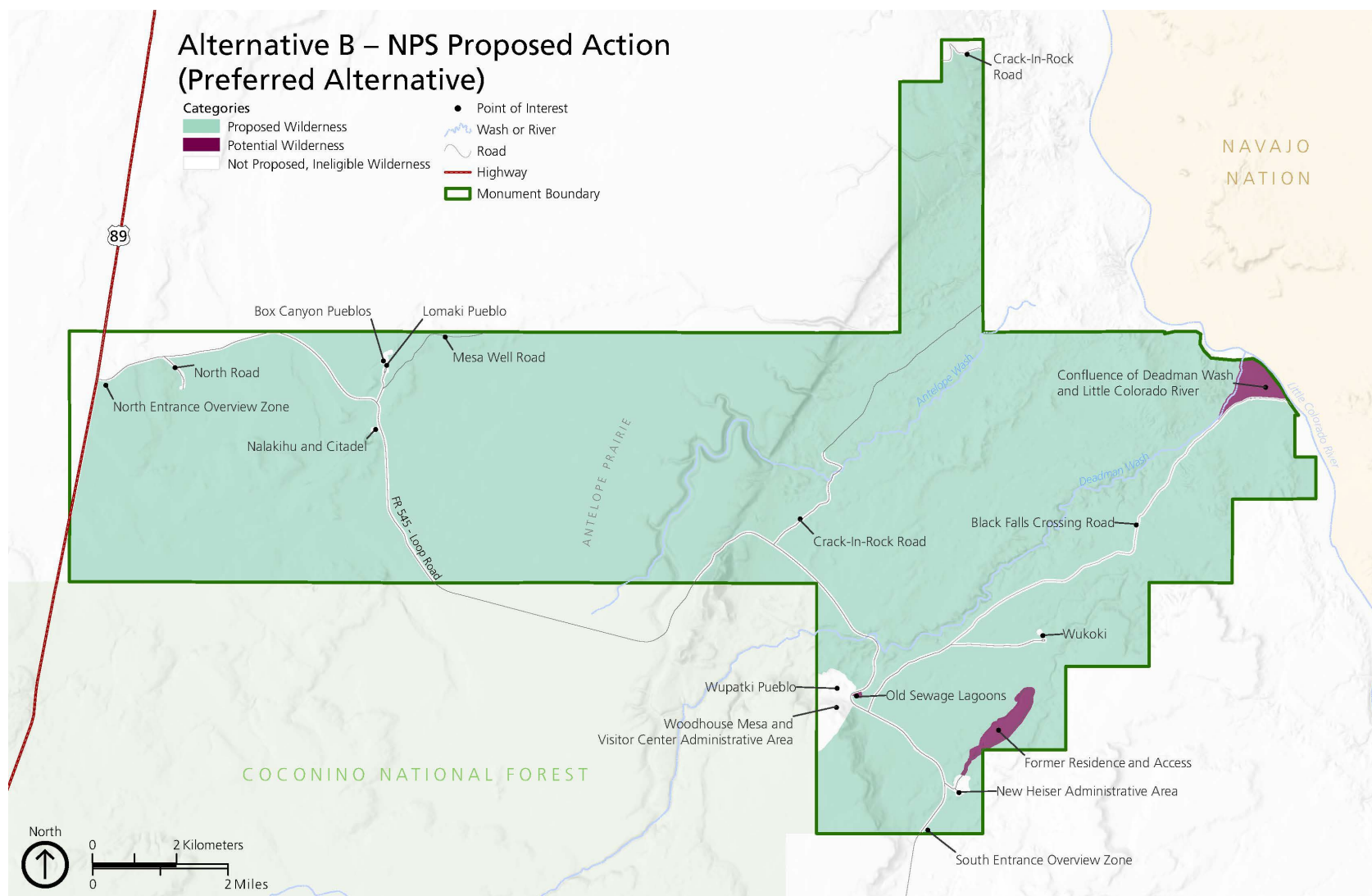


Figure 5. Map of Wilderness Categories in Alternative B: NPS Proposed Action (Preferred Alternative)

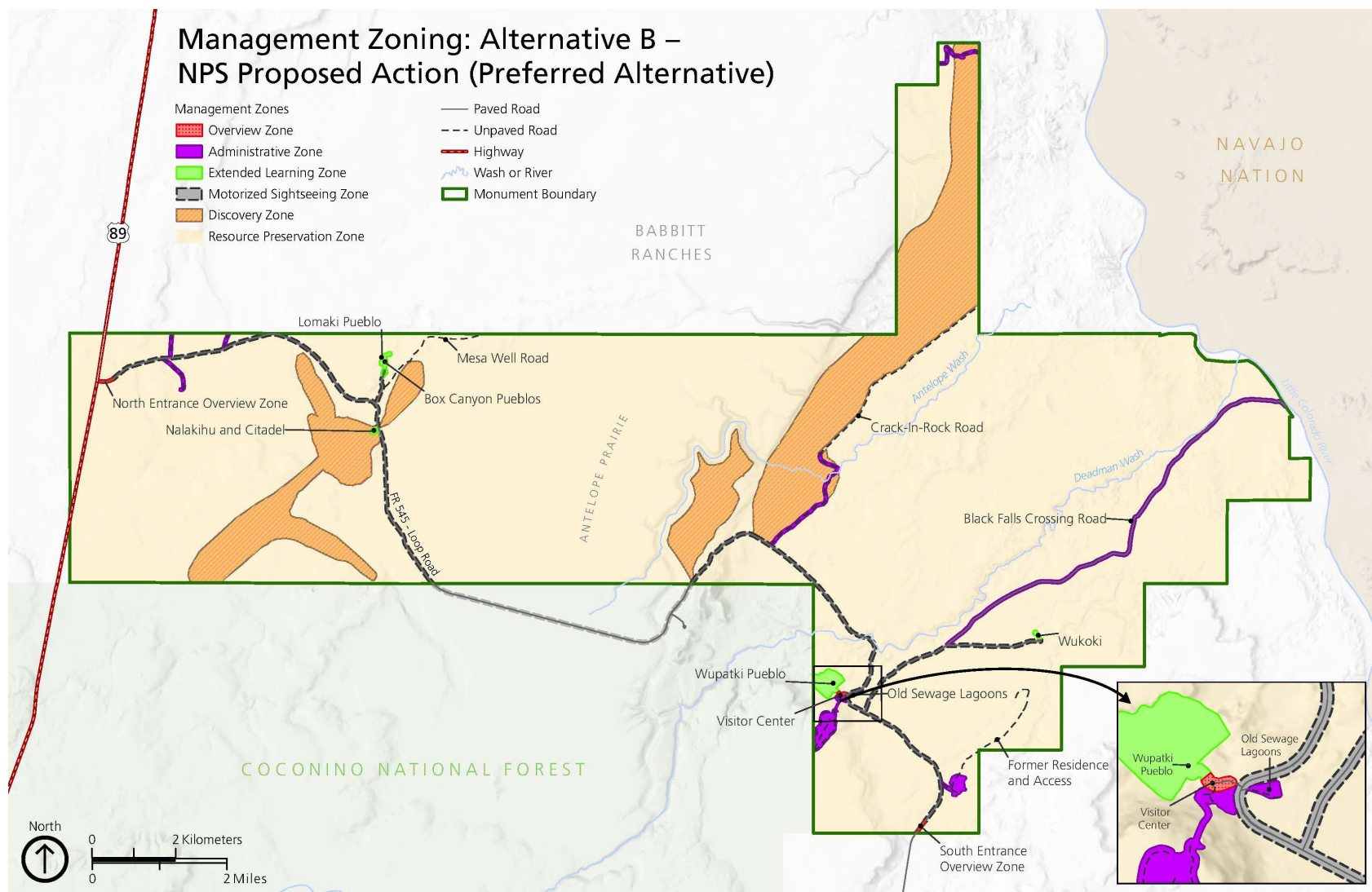


Figure 6. Map of Proposed Management Zoning in Alternative B: NPS Proposed Action (Preferred Alternative)

Alternative C

Under alternative C, the same lands would be proposed, proposed potential, or not proposed (and determined ineligible), as in alternative B, except related to Crack-In-Rock Road (study area 6). In this alternative, the full 4.3 miles of Crack-In-Rock Road, from its intersection with FR 545 (Loop Road) to the monument boundary near the base of “the chimney,” would not be proposed for wilderness designation (see figure 7). The road would remain in the administrative management zone and would continue to be open to motor vehicle use by NPS staff and researchers to support monument operations (see figure 8 for management zoning in alternative C).

Alternative C includes 33,577 acres (94.77% of the monument’s total acreage) proposed for immediate wilderness designation, 274 acres of potential wilderness (less than 1% of the monument’s total acreage), and 1,578 acres not proposed for wilderness and determined ineligible for inclusion in the National Wilderness Preservation System. The lands not proposed for wilderness and ineligible include 1,230 acres determined ineligible in the 2022 assessment and 348 acres previously determined eligible that would not be included in the wilderness proposal because they do not possess characteristics of wilderness due to the presence of roads, infrastructure, or other conditions. (See figure 7 for proposed wilderness, potential wilderness, and lands that are not proposed for wilderness and determined ineligible in alternative C. See table 2 for a comparison of acreages by category across alternatives.)

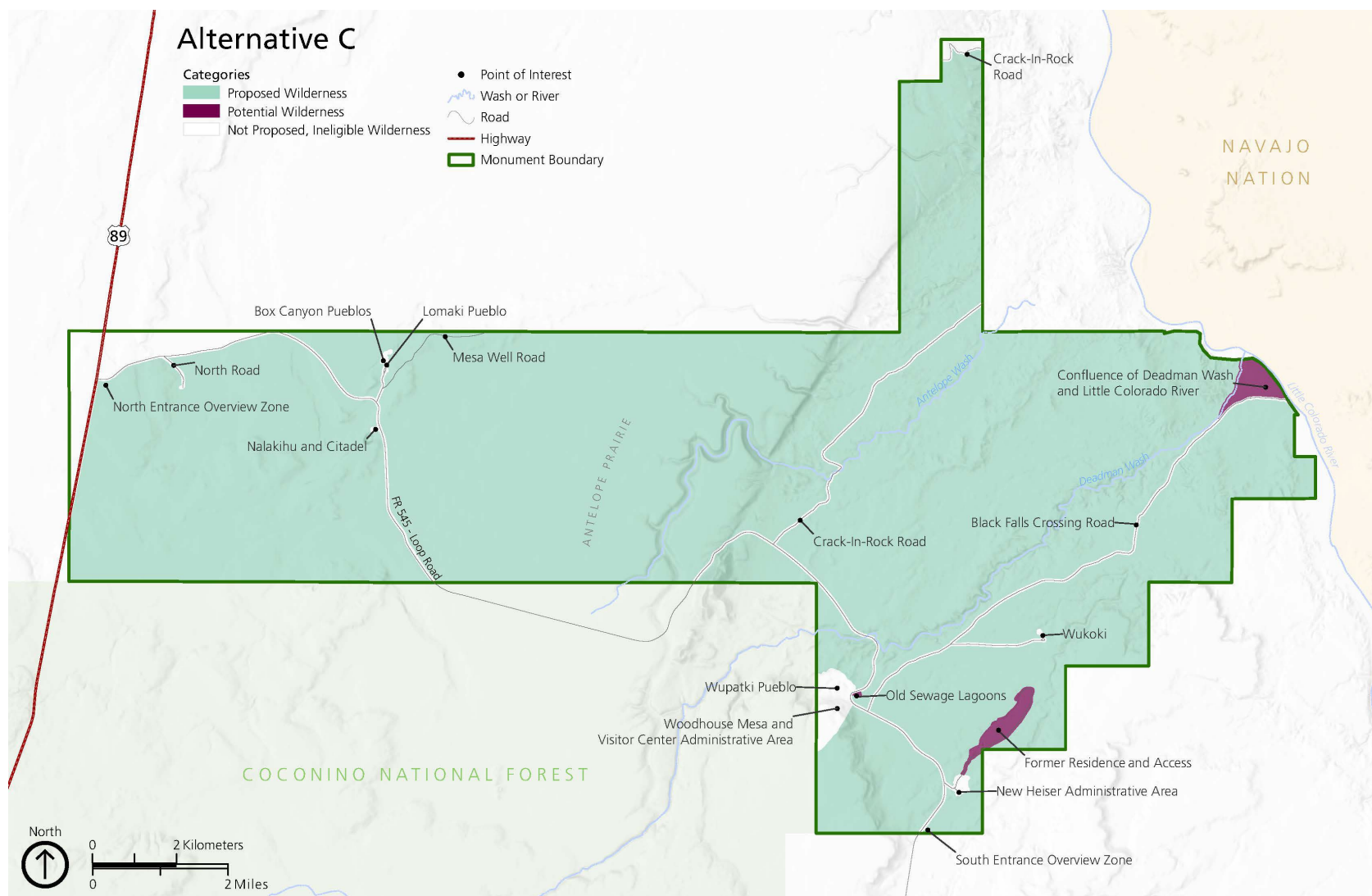


Figure 7. Map of Wilderness Categories in Alternative C

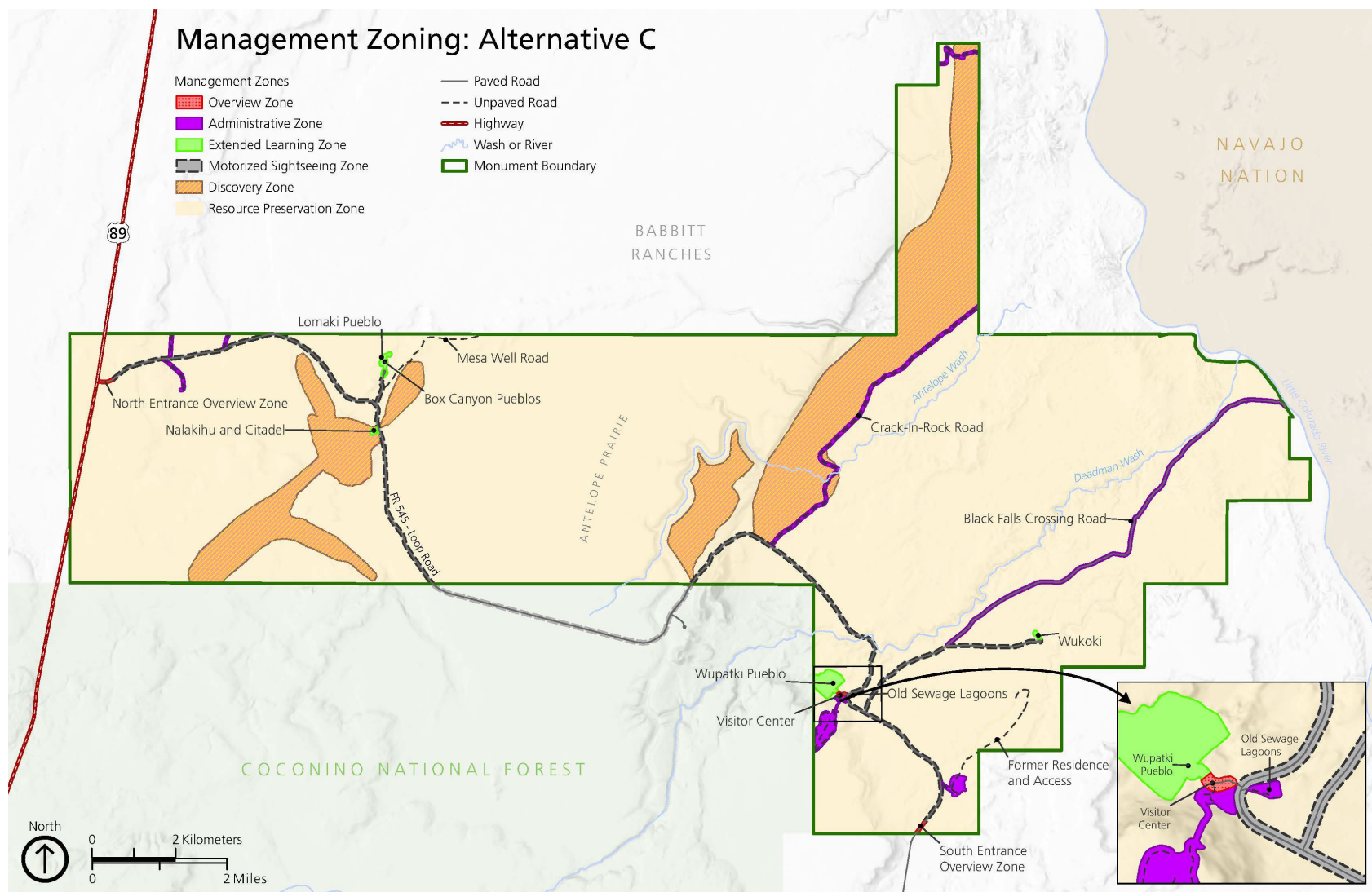


Figure 8. Map of Management Zoning in Alternative C

Alternative D

Under this alternative, and consistent with guidance in *Reference Manual 41*, the monument would use new and more accurate information gained through the wilderness study to update the 2022 wilderness eligibility determination but would not submit the findings and conclusions of the study to the NPS director at this time. The boundaries and acreages for lands to be excluded from wilderness, or determined ineligible, are the same as those within alternative B. Those lands determined eligible would have the same management direction as lands included in the proposed or potential wilderness in alternative B. Under alternative D, the updated determination would include 33,916 acres in total, approximately 95.73% of the monument's total acreage, that would be managed as eligible wilderness. Per NPS wilderness stewardship policy (e.g., *NPS Management Policies 2006*, chapter 6; Director's Order 41; and *Reference Manual 41*), the National Park Service would ensure preservation of wilderness character and "take no action that would diminish the wilderness eligibility" in these areas. The National Park Service would continue to apply minimum requirements analysis to eligible wilderness.

Alternative D identifies approximately 1,513 acres (4.27% of the monument's total acreage) as ineligible for wilderness designation. This includes 1,230 acres that were previously determined ineligible and 283 acres that were previously determined eligible in the 2022 determination but do not possess the characteristics of wilderness described in *NPS Management Policies*, sections 6.2.1.1 and 6.2.1.2. Should alternative D be selected for implementation by the NPS regional director in an approved decision document, these lands would be determined ineligible, and a revised eligibility determination would be published in the *Federal Register*, after which these lands would be released from management considerations in NPS wilderness stewardship policy. Ineligible lands would be managed according to the NPS Organic Act and all other laws, executive orders, regulations, and policies applicable to nonwilderness areas of the national park system. Henceforth, the National Park Service would only allow motorized travel on roads in areas that are determined ineligible under the revised determination (see figure 9 for eligible and ineligible lands in alternative D).

Alternative D includes changes to the geographical boundaries of Wupatki National Monument's established management zoning (see figure 10), which are the same as alternative B. These adjustments are needed to better align management with the updated eligibility determination. Details regarding changes in management zoning are included in table 1.

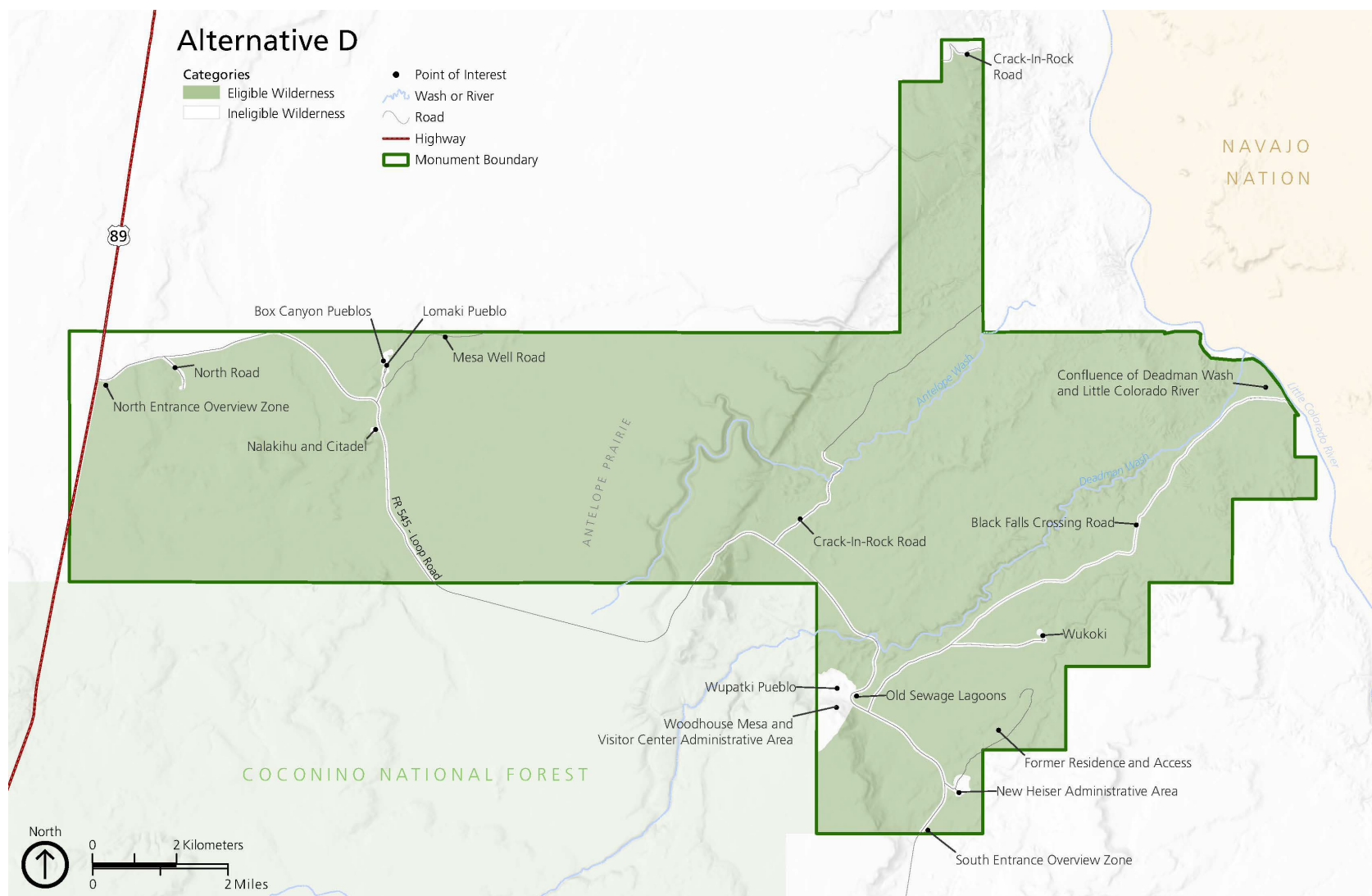


Figure 9. Map of Wilderness Categories in Alternative D

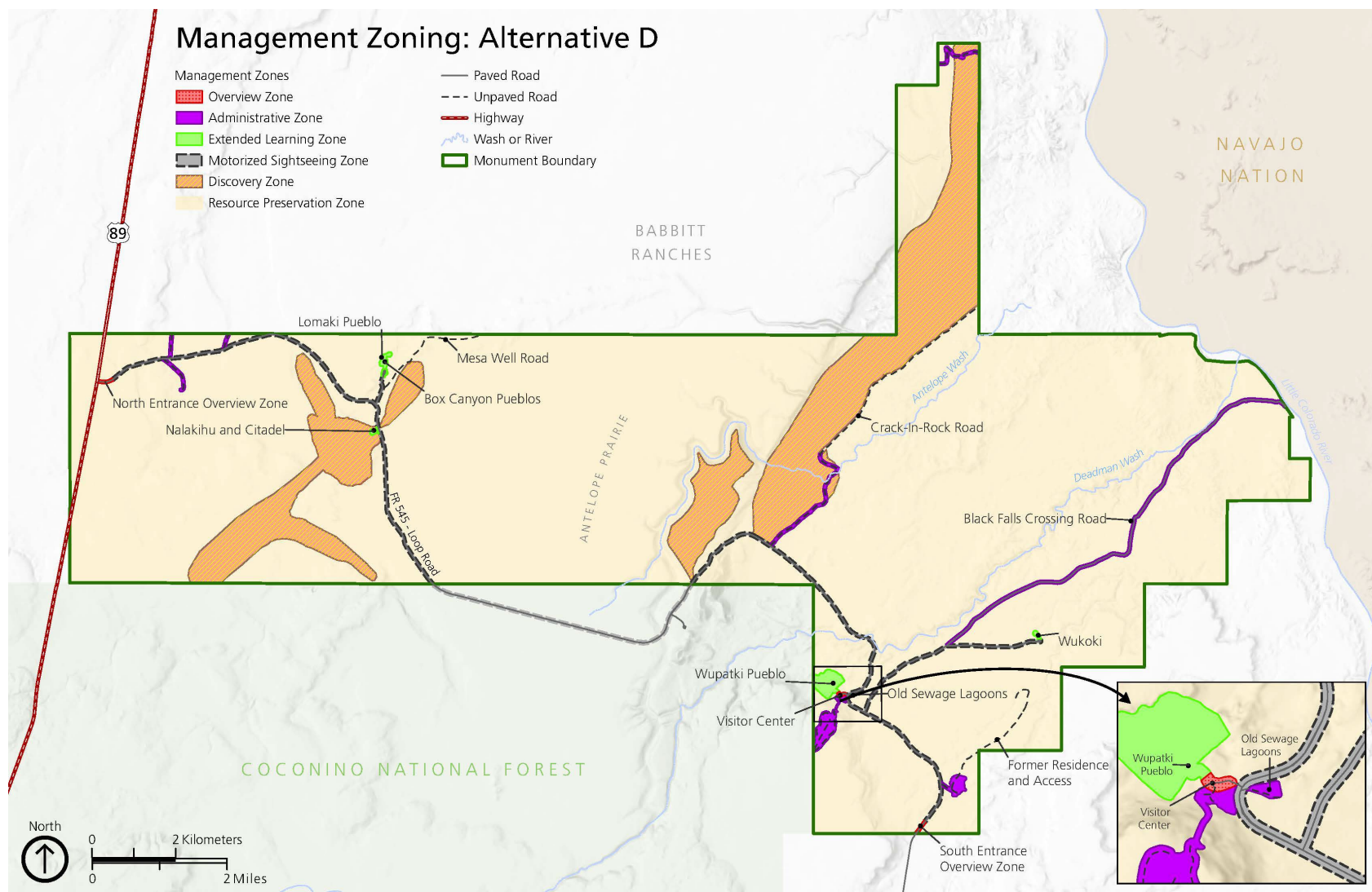


Figure 10. Map of Management Zoning in Alternative D

COMPARISON OF ALTERNATIVES BY STUDY AREA

Table 1 describes alternatives for each study area related to wilderness boundaries and categories (e.g., eligible, ineligible/not proposed, proposed wilderness, potential wilderness), and table 2 describes management zoning in the alternatives.

Table 1. Comparison of Alternatives by Study Area: Wilderness Boundaries and Categories

Study Area	Alternative A: No Action (Continue Current Management)	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
Alternative Summary	No lands would be proposed for immediate designation as wilderness or for future designation as potential wilderness. There would be no changes to the established eligibility determination. Lands that are currently eligible would remain eligible. Lands that are currently ineligible would remain ineligible.	The most lands would be forwarded to the NPS director for review and potential transmittal to the secretary of the interior as a wilderness proposal. Lands that are currently ineligible would remain ineligible. Lands previously determined eligible but found not to possess the characteristics of wilderness as described in NPS <i>Management Policies</i> 6.2.1.1 would be determined ineligible and would not be proposed for wilderness designation.	Lands would be forwarded to the NPS director for review and potential transmittal to the secretary of the interior as a wilderness proposal. Lands that are currently ineligible would remain ineligible. Lands previously determined eligible but found not to possess the characteristics of wilderness as described in NPS <i>Management Policies</i> 6.2.1.1 would be determined ineligible and would not be proposed for wilderness designation.	No lands would be proposed for immediate or future wilderness designation; however, established eligibility determinations would change. Lands that are currently ineligible would remain ineligible. Lands previously determined eligible but found not to possess the characteristics of wilderness, as described in NPS <i>Management Policies</i> 6.2.1.1, would be determined ineligible for wilderness designation.
1. Old Weather Station	Remain as eligible wilderness (eligible area 1).	Proposed as wilderness.	Same as alternative B.	Same as alternative A.
2. North Entrance Overview Zone	Undeveloped portions of this zone would remain as eligible wilderness (eligible area 1).	Lands that were previously determined eligible for wilderness would be proposed for	Same as alternative B.	Same as alternative A.

Study Area	Alternative A: No Action (Continue Current Management)	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
	The northern portion lying outside the established eligible wilderness boundary would remain as ineligible.	wilderness. The boundary would align with the established eligible wilderness boundary for eligible wilderness area 1. Lands already determined ineligible would not be proposed for wilderness and would remain ineligible.		
3. North Road	Remain as eligible wilderness (eligible area 1). Existing, occasional motorized use of roads in eligible wilderness to support monument operations would cease no later than two years after this wilderness study is approved by the NPS regional director or until the 2022 eligibility determination is amended through a separate process.	North Road, including a 100-foot setback on either side of centerline, would be determined ineligible consistent with the Wilderness Act, which states that "there shall be ... no permanent road within any wilderness area."	Same as alternative B.	Same as alternative B.
4. Lomaki Pueblo Extended Learning Zone	The short, realigned trail segment in this area would remain as eligible wilderness (eligible area 2). All other areas of this study area would remain ineligible.	The entire Lomaki Pueblo extended learning zone would not be proposed for wilderness and would be ineligible for wilderness consistent with NPS <i>Management Policies</i> 6.2.1.2, which states: "Historic features that are primary attractions for park visitors will generally not be recommended as eligible for wilderness designation."	Same as alternative B.	Same as alternative B.
5. Mesa Well Road	The road, which is no longer in use, would remain as	Proposed for wilderness.	Same as alternative B.	Same as alternative A.

Study Area	Alternative A: No Action (Continue Current Management)	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
	eligible wilderness (eligible area 2).			
6. Crack-In-Rock Road	The entire road within monument boundaries would remain as eligible wilderness (eligible area 2). Existing, occasional motorized use of roads in eligible wilderness to support monument operations would cease no later than two years after this wilderness study is approved by the NPS regional director or until the 2022 eligibility determination is amended through a separate process.	The first 1.65 miles of Crack-In-Rock Road and a 100-foot setback on either side from its junction with FR 545 would not be proposed for wilderness and would be determined ineligible. Occasional motorized use to support monument operations would continue to be allowed on this segment. Past mile point 1.65, the next 2.65-mile segment would be proposed for wilderness designation and motorized use would be prohibited.	The entire road and a 100-foot setback on either side of the centerline would not be proposed for wilderness and would be determined ineligible. Occasional motorized use to support monument operations would continue to be allowed.	The first 1.65 miles of Crack-In-Rock Road from its junction with FR 545 would not be proposed for wilderness and would be determined ineligible. Occasional motorized use to support monument operations would continue to be allowed on this segment. Past mile point 1.65, the next 2.65-mile segment would not be proposed for wilderness but would remain as eligible wilderness. Motorized use on this segment would not be allowed.
7. Northernmost Portion of "the Chimney"	Remain as eligible wilderness (eligible area 2). Occasional motorized use of the road would cease no later than two years after this wilderness study is approved by the NPS regional director or until the 2022 eligibility determination is amended through a separate process.	This area would be determined ineligible due to ongoing nonconforming uses. No lands would be proposed for wilderness. National Park Service use of the road could continue.	Same as alternative B.	Same as alternative B.
8. Cattle Crossing area	Would remain as eligible wilderness (eligible area 2).	Proposed for wilderness.	Same as alternative B.	Same as alternative A.

Study Area	Alternative A: No Action (Continue Current Management)	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
9. Confluence of Deadman Wash and Little Colorado River	The wash and surrounding lands would remain as eligible wilderness (eligible area 2).	Proposed as potential wilderness because of the continuing need for intensive management actions to combat the spread of invasive nonnatives but would qualify for designation after natural conditions have been restored.	Same as alternative B.	Same as alternative A.
10. Woodhouse Mesa and Visitor Center Administrative Area	Lands within this study area that are currently eligible, including the three access roads and above-ground power line, would remain as eligible wilderness (eligible area 3). Motorized use of the roads would cease no later than two years after this wilderness study is approved by the NPS regional director or until the eligible determination is amended through a separate process. All other parts of this area would remain ineligible.	All lands in this study area would be determined ineligible and would not be proposed for wilderness. Lands in the administrative management zone and a small area west to the monument boundary would be ineligible for wilderness, consistent with NPS <i>Management Policies</i> 6.2.1.2, which directs that "Lands containing aboveground or buried utility lines will normally not be considered as eligible for wilderness designation" and with the Wilderness Act, that states "there shall be ... no permanent road within any wilderness area."	Same as alternative B.	Same as alternative B.

Study Area	Alternative A: No Action (Continue Current Management)	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
11. Wupatki Pueblo Extended Learning Zone	Some areas north and west of the pueblo, a portion of the Wupatki ballcourt, and the historic entrance road would remain as eligible wilderness (eligible area 3). The rest of this area, including the Wupatki Pueblo and trail, would remain ineligible.	The entire Wupatki Pueblo extended learning zone would not be proposed for wilderness and would be determined ineligible, consistent with NPS <i>Management Policies</i> 6.2.1.2, which states: "Historic features that are primary attractions for park visitors will generally not be recommended as eligible for wilderness designation."	Same as alternative B.	Same as alternative B
12. Old Sewage Lagoons	Remain as eligible wilderness (eligible area 2).	Proposed as potential wilderness. This category reflects the intent of the National Park Service to restore the site to natural conditions, including restoring its natural topography and native vegetation in the long term.	Same as alternative B.	Same as alternative A.
13. Heiser Spring Restoration Area	Remain as eligible wilderness.	Proposed for wilderness.	Same as alternative B.	Same as alternative A.
14. New Heiser Administrative Area	Some lands that lie within the administrative management zone and support operational activities would remain as eligible wilderness. Portions of the study area that were previously determined ineligible for wilderness due to the presence of administrative roads, infrastructure, and continuing monument	No lands in this study area would be proposed for wilderness. The entire administrative management zone in this area would be determined ineligible due to ongoing nonconforming uses.	Same as alternative B.	Same as alternative B

Study Area	Alternative A: No Action (Continue Current Management)	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
	operations would remain ineligible.			
15. Former Residence and Access	Remain as eligible wilderness.	Proposed as potential wilderness. Currently, this area does not possess the characteristics described in the wilderness eligibility criteria in NPS <i>Management Policies</i> 6.2.1.1 and, therefore, does not qualify for immediate wilderness designation. However, this area has the potential for wilderness designation in the future, after temporary nonconforming uses and conditions (e.g., modern structures and utilities) have been removed. Historic and cultural resources would not be removed and would be preserved in place.	Same as alternative B.	Same as alternative A.
16. South Entrance Overview Zone	Undeveloped lands would remain as eligible wilderness (eligible areas 3 and 4). The paved pulloff and waysides would remain as ineligible.	Lands that were previously determined eligible for wilderness would be proposed for wilderness. The boundary would align with the established eligible wilderness boundary for eligible wilderness areas 3 and 4. The paved pulloff and waysides would remain ineligible.	Same as alternative B.	Same as alternative A.

Table 2. Comparison of Alternatives by Study Area: Management Zoning

Study Area	Alternative A: No Action (Continue Current Management)	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
2. North Entrance Overview Zone	This area would remain in the overview management zone.	The overview management zone would decrease in size to include only the paved pulloff and waysides. The rest of this area (i.e., lands proposed for wilderness, as well as lands north of the 100-foot setback to the north of the road centerline), would become part of the resource preservation zone.	Same as alternative B.	Same as alternative B.
5. Mesa Well Road	This area would remain in the administrative management zone.	This area would be rezoned from the administrative management zone to the resource preservation management zone because the road is no longer in use.	Same as alternative B.	Same as alternative B.
6. Crack-In-Rock Road	This area would remain in the administrative zone.	The first 1.65 miles of the road would remain in the administrative zone. The next 2.65-mile segment would change from administrative zone to resource preservation zone.	Same as alternative A.	Same as alternative B.
12. Old Sewage Lagoons	This area would remain within the administrative management zone.	This study area would be rezoned from the administrative management zone to the resource preservation management zone, reflecting the NPS intent to restore the site to natural conditions.	Same as alternative B.	Same as alternative B.
15. Former Residence and Access	This area would remain within the administrative management zone.	This area would be rezoned from the administrative management zone to the resource preservation management zone. This change reflects the NPS intent to remove modern structures and utilities and to preserve in place historic and cultural resources.	Same as alternative B.	Same as alternative B.

Study Area	Alternative A: No Action (Continue Current Management)	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
16. South Entrance Overview Zone	The entire area would remain within the overview management zone.	The overview management zone would decrease in size to align with the area determined ineligible for wilderness designation. The rest of this area would become part of the resource preservation zone.	Same as alternative B.	Same as alternative B.

Table 3. Comparison of Wilderness Categories and Acreages in the Alternatives⁶

Wilderness Categories	Alternative A: No Action (Continue Current Management)	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
Eligible wilderness	34,194 acres (96.53% of monument's total acreage)	NA (alternative B includes a wilderness proposal)	NA (alternative C includes a wilderness proposal)	33,916 acres (95.73% of monument's total acreage)
Proposed wilderness	NA (alternative A does not include a wilderness proposal)	33,642 acres (94.95% of monument's total acreage)	33,577 acres (94.77% of monument's total acreage)	NA (alternative D does not include a wilderness proposal)
Proposed potential wilderness	NA (alternative A does not include a wilderness proposal)	274 acres (0.77% of monument's total acreage)	274 acres (0.77% of monument's total acreage)	NA (alternative D does not include a wilderness proposal)
Ineligible/not proposed for wilderness	1,230 acres remaining ineligible (3.47% of monument's total acreage); no wilderness proposal	1,513 acres ineligible and not proposed for wilderness (4.27% of monument's total acreage) 1,230 acres previously determined ineligible 283 acres released from wilderness eligibility	1,578 acres ineligible and not proposed for wilderness (4.45% of monument's total acreage) 1,230 acres previously determined ineligible 348 acres released from wilderness eligibility	1,513 acres ineligible (4.27% of monument's total acreage) 1,230 acres previously determined ineligible 283 acres released from wilderness eligibility

6. Note that due to slight differences in geospatial data available and used between the 2013 eligibility assessment and this study, there are minor discrepancies in total area between alternative A and alternatives B, C, and D. Recent analysis indicates 35,429 acres total within monument boundaries (alternatives B, C, and D) instead of the 35,424 acres cited in the 2013 assessment (alternative A).

MITIGATION MEASURES AND BEST PRACTICES

Congress directed the National Park Service to manage the lands under its stewardship “in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (NPS Organic Act, 54 USC 100101[b] et seq.). As a result, the National Park Service routinely evaluates resources and implements mitigation measures whenever conditions are present that could adversely affect national park system resources.

This wilderness study does not propose any management actions or strategies other than minor adjustments to management zoning. In all cases, zoning would either stay the same or change from an administrative zone or overview zone to the resource preservation zone; therefore, there would be no impacts that require mitigation, and no mitigation measures have been identified.

The Wupatki National Monument backcountry management plan includes mitigation measures and best management practices that would be applied to all management actions in the monument’s backcountry, including wilderness. (For reference, see chapter 2 of the *Backcountry Management Plan/GMP Amendment/Environmental Assessment for Wupatki National Monument*, approved in April 2022).

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Affected Environment and Environmental Consequences

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CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Consistent with policy and regulations,⁷ the National Park Service used civic engagement and interdisciplinary team discussions to identify important issues to be analyzed in detail in the wilderness study and to identify those issues that could be eliminated from further study.

As a result, the National Park Service determined that the following topics should be carried forward for detailed analysis in this plan.

Wilderness Character:

- Natural quality
- Undeveloped quality
- Other features of value (cultural resources)

The analysis is based on expected changes that each alternative would have on the current conditions of the resources. This analysis includes beneficial and adverse impacts that would likely result from accepting any of the alternatives considered in this study.

WILDERNESS CHARACTER: NATURAL QUALITY

Affected Environment

The Wilderness Act states that an area of wilderness “is protected and managed so as to preserve its natural conditions.” Interagency guidance further defines the natural quality of wilderness as “ecological systems that are substantially free from the effects of modern civilization” (Landres et al. 2015). The natural quality of wilderness is assessed by the integrity of local ecosystems and their ability to change and develop without human manipulation, including all living and nonliving things in an area and the interactions between them. The record of change on natural quality also includes indirect and direct causes and intentional or unintentional changes.

The composition of geology, soils, grasslands, and woodlands and the associated wildlife that characterize the monument are described as one of the largest, naturally functioning, and protected areas of habitat in the region (Jordahl 2017). The open savanna and scrubby woodlands that are within eligible wilderness provide important habitat to various species, including several species of birds, reptiles, and small mammals, as well as habitat for American pronghorn. Due to the quality of habitat for native species, the monument serves as a critical scientific research area for wildlife and for tracking regional environmental change.

Environmental Trends and Planned Actions

The monument contains one of the few native grasslands on the southern Colorado Plateau that is not intentionally grazed by livestock (Schelz et al. 2013). The overall quality of the landscape

7. NPS *Management Policies 2006*, section 1.7; NPS Director’s Order 75a: *Civic Engagement and Public Involvement*; and guidance in section 4.2.E of the 2015 NPS NEPA Handbook.

vegetation is reported as “good” with improving condition (Baril et al. 2018); however, past and ongoing actions have effects on the natural quality of wilderness, including development, the presence of nonnative species, and regional habitat fragmentation.

Developmental activities in the monument have degraded the natural character of eligible wilderness and are noticeable on the landscape (modern buildings, roads, fences, and related infrastructure; see the “Wilderness Character: Undeveloped Quality” section in this chapter). The position, use, and/or retention of these features disrupts habitat connectivity between habitat patches, constrains the natural movement of organisms, is disruptive to ecological processes (e.g., water movement, natural patterns of erosion, natural vegetative succession), and provides artificial conduits or features (e.g., utility poles, fencing and fence posts, roads and roadsides) for opportunistic species to inhabit and/or use. For example, the persistent presence of birds of prey using utility poles exert unnaturally high levels of predation pressure on sensitive wildlife species, such as ground-nesting birds (Kristan and Boarman 2008). Roads in wilderness areas, even if the road or a portion of it is no longer used or is excluded (cherry-stemmed) from wilderness, would remain a continued interruption to natural ecological processes that would otherwise exist if the road were not there. Ecological impacts from existing roads and roadbeds at a local scale remain in place long after the road is in disuse, including compacted soils, semi-impervious surfaces, and a reduced quality of soil to support natural vegetation recovery, and may continue to disrupt erosional and hydrological processes over decades (Wiskes et al. 2023; Shaw 2022; Walsh and Rose 2022; Rab 2004; Belnap 2002). Roads, including unused and lightly used roads and other linear or artificial block features, can modify habitat connectivity between habitat patches; affect the occurrence, distribution, and type of plant and animal species; redirect the natural movement of organisms; and promote conditions for opportunistic species, such as the persistence of early-seral native species or exotic plant species in areas where soils have been disturbed or compacted. For example, predators or scavengers will disperse across the landscape along trails, roads, and other persistent, compacted surfaces and travel longer distances than what might be expected if these disturbances did not exist (Pickering and Norman 2017; Burgin and Hardiman 2012). Nonnative and invasive plants may persist along trails and roadsides, especially if these paths continue to be administratively used, and can provide pathways to expand the range of nonnative plant species.

The natural quality is also affected by the presence of invasive plant species. This environment is especially prevalent near the confluence of Deadman Wash and Little Colorado River (study area 9). The presence of invasive plant species has combined negative environmental effects on natural hydrological functioning, the quality of natural soils, and the disruption of native plant regeneration. The primary impacts of invasive plants include the reduction of native vegetation cover; a decrease in biodiversity as native vegetation communities, soils, and hydrological functioning are impacted; and the loss of culturally significant plants (Schelz et al. 2013). To guide management treatments, the monument’s 2009 invasive plant management plan prioritizes the list of nonnative species for targeted management. Monument management activities are expected to continue native plant establishment and recovery processes in disturbed areas or areas where ecological processes are acutely disrupted (e.g., the confluence of Deadman Wash and Little Colorado River), which would continue to improve the natural quality by improving native plant establishment, water flows, rates of erosion, and habitat quality for animals that depend on natural vegetation patterns. Management activities include chainsaw activity to

remove invasive shrubs and trees (e.g., tamarisk), and herbicide use. These activities are paired with planting native species and distributing woody mulches using plant material sourced from the monument. Monument staff also expect to use more passive treatments to recover disturbed areas (e.g., closed roads) through the colonization of native plants. As control methods on these invasive plant species progresses, some natural ecological functioning is returning to the treatment site and are expected to improve the natural quality of wilderness in the treatment areas over time.

Resource management activities, such as the installation of pronghorn-friendly fencing in most areas of the monument, replaced the use of barbed wire fencing, which existed for decades to manage livestock movement throughout the area. Past fencing efforts inhibited pronghorn movement within the monument. The updated fencing facilitates the passage of animals, which improves the natural movement of pronghorn across monument lands. However, though the fencing exists outside of eligible wilderness and natural pronghorn movement is improved, this does not diminish the impacts of the many pressures to natural pronghorn movement that exist beyond monument boundaries.

Regional habitat fragmentation associated with a growing human population is expected over the long term and is of concern. Neighboring lands are expected to be converted for urban, suburban, and energy production uses to support population growth. Continued fragmentation would be a detriment to the natural quality of the monument's wilderness character (Jordahl 2017). Though the continued fragmentation would be outside the monument, the actions would be expected to diminish the monument's unfragmented aspect, reducing it to a separate fragment of undeveloped habitat, depending on the land uses in the regional area. For example, although the monument provides high-value pronghorn habitat, the area in the monument is not large enough to support pronghorn year-round. Pronghorn herds depend on large expanses of unfragmented grasslands and must move into neighboring habitat to obtain sufficient forage and maintain their natural range and migration patterns. Continued fragmentation of the habitat outside the monument would constrain the ability of pronghorn to sustain healthy populations over time, as pronghorn face increasing pressures to successfully navigate fences, roadways, and developed areas within the region (Baril et al. 2018). This continued fragmentation would also be expected to negatively affect other species who depend on habitat connectivity for movement, habitat needs, and genetic flow between populations, including birds, small mammals, herptiles, and genetic exchange between rare plant species that are dependent on pollinators.

Ecological processes are expected to deviate from natural ranges of variation under climate change. The expected warmer average year-round temperatures, a reduced average precipitation, and the intensity and timing of precipitation events will likely influence surface and groundwater levels and rates of erosion, change wildfire intervals, and alter vegetation patterns and nonnative plant occurrences. Changes to vegetation and water availability at a landscape level would affect the animal communities who are associated with the vegetation communities that are currently in place. Especially for invasive plant establishment, the continued degradation of the natural character is expected to accelerate as climate change impacts diminish conditions that favor the current assemblages of native plants. Nonnative plants have varying ranges in the monument lands and degrees of invasiveness and impact. At

least 40 nonnative plants are documented in the monument, and 5 of those species have or are expected to have a high ecological impact with climate change (Baril et al. 2018). The acreage of nonnative plant establishment in eligible wilderness is estimated at approximately 1,800 acres (about 5% of total eligible wilderness), though this is highly variable depending on annual precipitation amounts (DeCoster and Swan 2016).

Table 4 summarizes the activities that are reasonably foreseeable actions.

Table 4. Summary of Reasonably Foreseeable Actions Associated with Invasive Plant Control and Native Plant Establishment and Recovery Projects

Project/Project Area	Expected Activities	Estimated Area of Treatment (acres)
Lower Deadman Wash—Continue ongoing actions to control invasive plant species to improve natural ecological functioning.	• Herbicide application • Mechanized/motorized removal of plant material • Native plant cultivation and establishment	66 acres
Decommissioned sewage lagoons and associated access road (165 meters)	• Return of native plant material to treatment area and decommissioned road to site • Seeding of area with native plant material	1.58 acres
Decommissioned weather station	• Restoration of area (20x20 feet) to natural conditions through natural plant colonization	0.01 acres
Removal of modern infrastructure, objects, and buildings associated with an inactive residential area	• Restoration of area to natural conditions through native seed collection and sowing, and woody debris from onsite locations used as mulch.	1.2 acres
Decommissioned roads and road spurs	• Restoration of area to natural conditions through natural plant colonization	16.9 acres
Mesa Well Road	• Natural plant colonization	0.186 acres

Impacts on Natural Quality of Wilderness Character

Alternative A: No Action (Continue Current Management)

Under the no-action alternative, conditions for the natural quality of wilderness character would continue to be the same as or similar to existing conditions, with the same trends and impacts from past, present and foreseeable planned actions.

Under the no-action alternative, eligible wilderness lands would remain as eligible, and lands that do not meet the purposes and definition of wilderness would continue to be retained within eligible wilderness boundaries. Motorized use of roads in eligible wilderness would cease no later than two years after this wilderness study is approved or until the 2022 eligibility determination is amended. Additionally, eligible wilderness areas would continue to be zoned

for purposes that are inconsistent with wilderness, and the existence of buildings, fences, roads and trails, and nonnative plant species that are disruptive to the natural quality would remain.

As required under current NPS management policies, the minimum requirements concept would be applied to any nonconforming uses that would still occur in eligible wilderness areas. Features or actions that are related to modern existing development and that facilitate administrative uses would be expected to remain and not be eliminated, excepting the use of roads where administrative use would cease. These features or actions include existing development, presence of nonnative species, and habitat fragmentation-associated actions within eligible wilderness areas, and would degrade the natural quality of wilderness. Existing development and roads would continue to directly and indirectly contribute to habitat fragmentation. Nonnative species compete with native species, disrupt ecological patterns, and are associated with habitat fragmentation. Ceasing motorized use of roads, however, would have some localized and slight beneficial impacts. The absence of motor vehicle use on the road would lessen direct impacts on insects, small mammals, birds, and other wildlife by eliminating the risk of collision or disturbance to their behaviors from moving vehicles. Disuse of roads would avoid continued compaction of soils and allow for vegetation to colonize. However, the existing compaction (if the road were not actively restored to a more natural state) could limit growth and vigor of plants compared to similar surrounding soils that are not compacted, and continues to contribute to the effects of habitat fragmentation, as described in the affected environment.

Although there may be a slight improvement to the natural quality from disuse of certain roads, overall, this alternative, when paired with ongoing actions and actions common to alternatives B, C and D, would result in conditions that are similar to what is currently experienced, as described above.

Cumulative Impacts — The “Environmental Trends and Planned Actions” section (above) describes the impacts of past, ongoing, and reasonably foreseeable future actions, and while conditions in the natural wilderness environment are generally good, they are declining.

While the recovery of natural conditions would occur over time through both direct and indirect approaches, the cumulative impacts on the natural quality would continue to be adverse for the foreseeable future. As ecological conditions improve, it would be reasonable to expect that the natural quality would improve for NPS eligible wilderness. Vegetation restoration activities are intended to improve the natural quality as habitat quality improves. Discontinuing the use of some roads would eliminate impacts on wildlife and allow for some vegetation restoration to occur, though the indirect effects of habitat fragmentation associated with roads and other development would remain for the long term if these areas were not actively rehabilitated. Though efforts to improve the natural conditions for eligible wilderness would continue, the continued fragmentation outside the monument would be expected to reduce monument lands to a representative fragment of natural area, depending on the intensity of development occurring outside the monument.

When the incremental impacts of the no-action alternative are combined with the impacts of past, ongoing, and reasonably foreseeable future planned actions, the overall cumulative impacts on the natural quality would continue to be adverse due to the presence of continued negative

impacts from existing development (e.g., roads) and associated habitat fragmentation, altered fire regimes, and the persistence of nonnative species (i.e., the natural quality is not substantially free from the effects of modern civilization). The incremental impacts of the no-action alternative would contribute to, but not substantially change, the impacts already occurring on the natural quality of NPS eligible wilderness. As a result, the overall cumulative impacts on the natural quality of wilderness would be adverse under alternative A.

Alternative B: NPS Proposed Action (Preferred Alternative)

Under the preferred alternative, 33,642 acres would be proposed wilderness and 274 acres as proposed potential wilderness. Conditions for the natural quality of wilderness character would continue to be the same as or similar to existing conditions described in the “Affected Environment” section (above) across these areas. If the lands included within the proposal are forwarded and designated by Congress, designation and subsequent management of these lands pursuant to the Wilderness Act would provide the highest level of protection of the monument’s natural quality. Protection as wilderness would minimize or prevent future development within the monument to preserve the primeval character and influence of the land.

Under this alternative, adjustments to management zoning would better protect proposed wilderness and proposed potential wilderness by transferring 177 acres from the administrative and overview zones to the resource preservation zone (which emphasizes the protection of natural and cultural resources). A revision of management zones to provide resource management protections to areas that would be included in proposed and proposed potential wilderness areas would facilitate ecological recovery of these areas and support actions that would remove existing infrastructure and return those areas to a more natural state, as well as provide guidelines for wildland fire management planning.

Under alternative B, 283 acres of eligible wilderness where modern facilities, ongoing development, and nonconforming uses exist would be determined ineligible for wilderness designation. While the removal of these lands from any wilderness category in the monument would improve the overall natural quality the quantity of the proposed and proposed potential wilderness, the impacts on the natural quality would remain in place for the 1.65 miles but not for the 2.43 miles, compared to the current total usage of 4.08 miles.

When compared to alternatives A or D, alternative B would protect substantially more acres that contribute to the natural quality of wilderness under the Wilderness Act. When compared to alternative A or C, alternative B would protect slightly more acres that contribute to the natural quality of wilderness under the Wilderness Act.

Cumulative Impacts — The “Environmental Trends and Planned Actions” section (above) describes the impacts of past, ongoing, and reasonably foreseeable future actions, and while conditions in the natural wilderness environment are generally good, they are declining, as actions described in that section would be expected to continue, and there is little or no control over activities occurring on lands that are outside of monument boundaries .

While the recovery of natural conditions would occur over time through both direct and indirect approaches, the cumulative impacts on the natural quality would continue to be adverse for the foreseeable future. Under alternative B, eligible wilderness lands would be beneficially

impacted by changes to management zone areas and planned management activities that are consistent with wilderness and would eliminate some of the persistent adverse effects on the natural quality over time. However, though vegetation restoration activities and other beneficial management on the natural environment are intended to improve natural quality over the long term, these activities contribute to negative impacts on the condition of the natural quality for the foreseeable future due to the presence of continued negative impacts from existing development (e.g., roads) and associated habitat fragmentation, altered fire regimes, and the persistence of nonnative species (not substantially free from the effects of modern civilization). Additionally, while natural conditions might improve for eligible wilderness lands inside monument boundaries over the long term, the continued fragmentation outside the monument would be expected to reduce monument lands to a representative fragment of natural area, depending on the intensity of development occurring outside the monument.

Planning guidance and management related activities that affect the natural quality of proposed and proposed potential wilderness would continue under current NPS management policies. A revision of management zones to provide resource management protections to areas that would be included in proposed and proposed potential wilderness areas would facilitate ecological recovery of these areas, as well as logically support actions that would remove existing infrastructure and return those areas to a more natural state. Though actions to restore vegetation communities would impact the natural quality for the foreseeable future, it would be reasonable to expect that the natural quality would improve for 250 acres of proposed and proposed potential wilderness areas over the long term.

When the incremental impacts of alternative B are combined with the impacts of past, ongoing, and reasonably foreseeable future planned actions, the overall cumulative impacts on the natural quality of monument wilderness lands might improve; however, the presence of continued negative impacts from existing development (e.g., roads) and associated habitat fragmentation, altered fire regimes, and the persistence of nonnative species would remain. The incremental beneficial impacts of alternative B would not substantially change the negative impacts that are already occurring on the natural quality of wilderness.

Alternative C

Under alternative C, the NPS would propose 33,577 acres as proposed and 274 acres as proposed potential wilderness. The conditions for the natural quality of wilderness character would continue to be the same as or similar to existing conditions described in the “Affected Environment” section (above).

Under this alternative, changes to zoning would be the same as alternative B, except for Crack-In-Rock Road, which remain the same as alternative A. A revision of management zones to provide resource management protections to areas that would be included in proposed wilderness and proposed potential wilderness would facilitate ecological recovery of these areas and support actions that would return those areas to a more natural state, as well as provide guidelines for wildland fire management planning.

In addition, in alternative C, 348 acres of eligible wilderness land where modern facilities, ongoing development, and nonconforming uses exist would be determined ineligible. This includes the full length of Crack-In-Rock Road in study area 6 (4.3 miles, 104 acres). No length

of the road would be subject to ecological restoration, as described in alternative B, and would remain in use for administrative purposes. While the removal of these lands from any wilderness category in the monument would improve the overall natural quality in proposed and proposed potential wilderness, the presence of a road would be a continued interruption to natural ecological processes that would otherwise exist if the road were not there, as described in alternative B.

When compared to alternatives A, B, and D, alternative C would protect slightly fewer acres that contribute to the natural quality of wilderness under the Wilderness Act, a decrease in the amount of protected area that would contribute to the natural quality of wilderness.

Cumulative Impacts — The “Environmental Trends and Planned Actions” section (above) describes the impacts of past, ongoing, and reasonably foreseeable future actions, and while conditions in the natural wilderness environment are generally good, they are declining.

While the recovery of natural conditions would occur over time through both direct and indirect approaches, the cumulative impacts on the natural quality would continue to be adverse for the foreseeable future. Under alternative C, adjustments to management zoning would provide resource management protections to areas proposed as wilderness and proposed as potential wilderness. Approximately 112 acres would be transferred from the administrative or overview zones to the resource preservation zone, which emphasizes the preservation of natural and cultural resources. These refinements to zoning would facilitate ecological recovery of these areas and support actions to remove existing infrastructure and return those areas to a more natural state. The restoration actions over the foreseeable future would continue to impact the natural quality of areas that are currently identified as in need of ecological restoration, and as conditions improve over the long term, it would be reasonable to expect that the natural quality would improve for 250 acres of proposed wilderness and proposed potential wilderness. However, though ecological restoration activities might improve the natural quality for eligible wilderness lands inside monument boundaries, the continued fragmentation outside the monument would be expected to reduce monument lands to a representative fragment of natural area, depending on the intensity of development occurring outside the monument.

When the incremental impacts of alternative C are combined with the impacts of past, ongoing, and reasonably foreseeable future planned actions, the overall cumulative impacts on the natural quality of monument wilderness lands would continue to be adverse due to the presence of continued negative impacts from existing development (e.g., roads) and associated habitat fragmentation, altered fire regimes, the persistence of nonnative species (not substantially free from the effects of modern civilization), and development activities occurring on lands outside the monument. This alternative, when paired with ongoing actions and actions common to alternatives A, B, and D, would result in conditions that would moderately improve the natural quality of wilderness within monument boundaries. However, the incremental impacts of alternative C would not substantially change the negative impacts that are already occurring on the natural quality of wilderness.

Alternative D

Under alternative D, a total of 283 acres that are eligible wilderness under alternative A would be determined ineligible due to existing nonconforming uses that are incompatible with wilderness

character. Removal of these lands from any wilderness category in the monument would improve the overall natural quality; however, the negative effects on the natural character would remain in place across the 33,916 acres of remaining eligible wilderness for the foreseeable future, as described in alternative B.

Under this alternative, adjustments to management zoning would better preserve eligible wilderness by transferring 177 acres from the administrative and overview zones to the resource preservation zone. A revision of management zones to provide resource management protections to areas that would be included in eligible wilderness areas would facilitate ecological recovery of these areas and support actions that would remove existing infrastructure and return those areas to a more natural state, as well as provide guidelines for wildland fire management planning, thus improving the natural character of these lands over the long term.

When compared to alternative A, management zoning changes in alternative D would better protect the natural quality of wilderness. When paired with ongoing actions and actions common to alternatives A, B, and C, alternative D would result in conditions that are similar to what is currently experienced, as described above.

Cumulative Impacts — The “Environmental Trends and Planned Actions” section (above) describes the impacts of past, ongoing, and reasonably foreseeable future actions. While conditions in the natural wilderness environment are generally good, they are declining.

While the recovery of natural conditions would occur over time through both direct and indirect approaches, the cumulative impacts on the natural quality would continue to be adverse for the foreseeable future. Under alternative D, eligible wilderness lands would be beneficially impacted by changes to zoned areas and planned management activities that are consistent with wilderness and would eliminate some of the persistent and adverse effects on the natural quality. However, though vegetation restoration activities and other improvements to the natural environment are intended to improve natural quality over the long term as habitat quality improves, the current conditions are expected to remain for the foreseeable future, thus contributing to negative impacts on the condition of the natural quality due to the presence of continued negative impacts from existing development (e.g., roads) and associated habitat fragmentation, altered fire regimes, and the persistence of nonnative species (not substantially free from the effects of modern civilization). Additionally, while natural conditions might improve for eligible wilderness lands inside monument boundaries over the long term, the continued fragmentation outside the monument would be expected to reduce monument lands to a representative fragment of natural area, depending on the intensity of development occurring outside the monument.

When the incremental impacts of alternative D are combined with the impacts of past, ongoing, and reasonably foreseeable future planned actions, the overall cumulative impacts on the natural quality would continue to be adverse. As a result, the incremental impacts of alternative D would contribute to, but not substantially change, the impacts that are already occurring on the natural quality of wilderness.

WILDERNESS CHARACTER: UNDEVELOPED QUALITY

Affected Environment

Wilderness is essentially without permanent improvements or the sights and sounds of *modern* human occupation (Landres 2015). “Undeveloped” essentially refers to the degree of influence of modern development on wilderness areas rather than developments that are part of the cultural history of the area (included in the other features of value section). The undeveloped quality is influenced by the presence of modern structures, installations, and habitations and the use of motor vehicles, motorized equipment, or mechanical transport. The absence or removal of structures and other prohibited activities preserves or improves this quality. In contrast, the presence of structures, installations, and other prohibited activities degrades this quality, whether by the agency for administrative purposes, by others authorized by the agency, or when there are unauthorized uses.

While the Wupatki eligible wilderness protects thousands of archeological sites and countless artifacts from thousands of years of human history, it remains largely untouched by the hand of modern human development. As described in the 2017 wilderness character narrative, “This utter absence of visible development is truly remarkable, considering the sparseness of vegetation and lack of visual barriers. The landscape here flows continuously, untouched and unbroken by straight lines and right angles so symptomatic of human development” (Jordahl 2017).

Some modern administrative and research-related developments exist within the eligible wilderness lands. The most ubiquitous signs of development are rebar plot markers that denote specific restoration areas, study plots, and archeological site datums. These rebar stakes likely number well into the thousands. Further, roughly 24 Carsonite signs citing the Archeological Resources Protection Act status are present. While these installations assist in resource restoration and protection, they are clear signs of modern development and degrade the undeveloped quality. Over the monument’s history, there have been several “borrow pits” or locations from which rocks, sand, gravel, and cinder were sourced to build roads or other developments. While most borrow pits have been reclaimed or are in various states of naturalization, staff are aware of one remaining borrow pit south of Black Falls Crossing Road (approximately 12 acres). Additionally, there is one deep aquifer monitoring well and 11 shallow groundwater monitoring wells within the eligible wilderness. Table 5 (below) summarizes modern development existing within the wilderness study areas, as well as planned (reasonably foreseeable) restoration and management actions that would occur independent of this wilderness study and influence the undeveloped character.

Table 5. Development within Eligible Wilderness and Related Planned Actions

Area	Existing Development within Eligible Wilderness	Planned Actions Outside of This Study
Monument-wide	Approximately 114.38 acres of eligible wilderness and 7.23 miles of road within eligible wilderness include some sort of modern development or motorized/mechanized use.	Including the planned actions in all of the rows below, approximately 2.95 acres of developed lands would be restored to natural conditions, and over 2.2 miles of road would be subject to passive restoration.
Study Area 1: Old Weather Station	<0.25 acres, including a decommissioned weather station that includes nonnative cinder soil, five T-posts, four steel 1-inch survey stakes, one wooden post (4 foot by 4 foot), a 9-square-foot poured concrete pad approximately 4 inches thick, with support rebar.	The infrastructure would be removed by a small team via the use of hand tools. The cinder piles would be shoveled into rock bags, nonnative materials would also be bagged, and all materials would be carried out. Natural processes would be left to facilitate native vegetation recolonization and succession to restore natural conditions. This restoration should be completed within five years.
Study Area 3: North Road	0.43 miles of natural road surface, with occasional motorized uses for administrative work and Tribal access.	N/A
Study Area 5: Mesa Well Road	1.53 miles of abandoned nonoperational road with a natural surface and a cable across the western entrance.	The road, which has not been used by motorized vehicles in years, would be officially closed to motor vehicle use and left to revegetate. Natural process would be left to facilitate native vegetation recolonization and succession to restore natural conditions. This closure would occur within one year.
Study Area 6: Crack-In-Rock Road	4.3 miles of natural road surface. Motorized vehicle use of the first 1.65 miles up to eight times per year to support guided overnight hikes in October and April. Occasional access for researcher, law enforcement, and resource monitoring.	N/A
Study Area 8: Cattle Crossing	27 acres that include two parallel barbed wire fences with T-posts and a gate at the west side.	N/A

Area	Existing Development within Eligible Wilderness	Planned Actions Outside of This Study
Study Area 9: Confluence of Deadman Wash and Little Colorado River	66 acres in which infrequent vehicle and chainsaw use for fire management or tamarisk or camelthorn removal may occur.	Ongoing intensive management activities, which can include the use of motorized or mechanized equipment to address invasive species, will continue into the foreseeable future, but monument staff expect to stop this use once natural conditions have been restored.
Study Area 10: Woodhouse Mesa and Visitor Center Administrative Area	1.55 miles of road that includes the seismographic road, the Powerline Road, and the road leading to the water tanks that still accommodate motorized uses and approximately 0.45 miles of aboveground utility lines.	N/A
Study Area 12: Old Sewage Lagoon	1.5-acre footprint, including aboveground lagoon components for three pools, including PVC pipes and fencing (838 feet) and approximately 540 feet of road surface.	Modern infrastructure would be removed, and the area would be restored to natural conditions. This action would temporarily degrade the undeveloped quality, as there would be the use of pump trucks, a bulldozer, backhoes, excavators, and a loader to remove the structures, sewage sludge, and lagoon liners and then to refill the lagoons with soil. The area of disturbance would be limited to the lagoon and access road. Natural processes would be left to facilitate native vegetation recolonization and succession to restore natural conditions. Monument staff anticipate the restoration should be completed within the next two years.
Study Area 14: New Heiser Administrative Area	18-acre footprint includes access roads that still accommodate motorized use and aboveground utility lines and disturbed open areas where monument vehicles and other motorized equipment come and go from the area. There are fill piles and other materials stored for construction projects, old foundations of former employee housing sites, and a weather station.	N/A

Area	Existing Development within Eligible Wilderness	Planned Actions Outside of This Study
Study Area 15: Former Residence and Access	1.2-acre footprint and 1.6 mile two-track road. This area includes modern structures and infrastructure at the former residence, including the house (approximately 1,500 square feet, a waterline, two outbuildings/storage sheds (400 square feet and 275 square feet). There is abandoned equipment, construction materials and areas where fill materials are stored, and an unimproved road to the former residence.	All modern infrastructure would be documented and then removed. This project would require some temporary disturbance to the undeveloped quality of wilderness using motorized vehicles to demolish and remove the debris. Natural processes would be left to facilitate native vegetation recolonization and succession to restore natural conditions. At present there are no set plans or time lines for when this would occur, but the monument hopes to address it within the next 10 years.

Areas evaluated in this study are in the overview, administrative, discovery, and resource preservation management zones. Each zone has different levels of acceptable development and environmental modifications (see appendix E for full management zoning descriptions).

Environmental Trends and Planned Actions

In addition to the planned actions identified in table 5, the following trends or planned actions are considered in the cumulative impacts.

The 2022 backcountry management plan identified the possibility of two new visitor use areas within eligible wilderness. The Pronghorn Plateau and Kaibab Crossing routes could involve minimal signage and route delineation, but no formal trail or further infrastructure or services. More specific details for any development related to this trail would be further defined before implementation.

Other ongoing trends include potential impacts from climate change that may require the presence or use of additional development. For example, needs for fire or invasive vegetation management could require the temporary and minimal unaccompanied installments of scientific equipment or the use of equipment to support resource health (e.g., mechanized use to remove invasive species or brush).

Impacts on Undeveloped Quality of Wilderness Character

Alternative A: No Action (Continue Current Management)

Under the no-action alternative, eligible wilderness lands would remain as eligible, and some lands that do not meet the purposes and definition of wilderness will continue to be retained within eligible wilderness boundaries until a new eligibility assessment is completed. Eligible wilderness areas would continue to be adversely affected by existing modern development within the wilderness, as identified in table 5 in the “Affected Environment” section.

The undeveloped quality would have temporary, ongoing adverse impacts from the continued occasional motorized use to support monument operations of North Road and Crack-In-Rock Road, which are both in eligible wilderness. Motorized use diminishes the undeveloped quality under section 4(c) of the Wilderness Act. However, in the long term, those uses would cease as described in chapter 2, which would improve the undeveloped quality and have positive impacts on the undeveloped quality.

Additionally, some eligible wilderness areas would continue to be in management zones that are inconsistent with wilderness, most notably the administrative zone, where development and mechanized uses are permitted and expected. This alternative would continue to see this quality degraded.

A minimum requirements analysis, as required under NPS policy, would continue to be applied to nonconforming uses in eligible wilderness areas, including modern development or motorized/mechanized uses. A minimum requirements analysis would be used to evaluate if an action, including motorized and mechanized uses, that would diminish this quality is truly necessary in wilderness and the minimum required.

Cumulative Impacts — No cumulative impacts would occur on the undeveloped quality under this alternative because there are no direct or indirect impacts.

Alternative B: NPS Proposed Action (Preferred Alternative)

Under the NPS preferred alternative, 33,916 acres, or 95.72%, of the monument would be forwarded to the director for inclusion within a wilderness proposal: 33,642 acres as proposed for immediate wilderness designation and 274 acres as proposed potential wilderness once nonconforming uses or conditions have been eliminated. If the lands included within the proposal are forwarded and designated by Congress, designation and subsequent management of these lands pursuant to the Wilderness Act would provide the highest level of protection of the monument's undeveloped quality. Protection as wilderness would minimize or prevent future development to preserve the primeval character and influence of the land.

The wilderness proposal in alternative B would include closing approximately 2.65 miles of Crack-In-Rock Road, which would be left to revegetate naturally. While the road would be visible until revegetation occurs, removing a permanent road and ceasing motorized vehicle access, which is a prohibited use under section 4(c) of the Wilderness Act, would improve the undeveloped character of 196 acres (2.65 linear miles) of proposed wilderness under this alternative.

Under alternative B, 283 acres of lands that were previously determined eligible would be determined ineligible due to existing and ongoing modern development, facilities, and nonconforming uses. This includes the first 1.65 miles of Crack-In-Rock Road, which would be removed from any category of wilderness to accommodate continued motorized use for limited hiking access in April and October and research and park operations. The road would continue to be present, and continued use of this portion of the road outside of wilderness would still adversely affect the viewscape and introduce sights and sounds of modern human occupation that would degrade the undeveloped character for visitors within nearby wilderness. However, the National Park Service would minimize any road use while visitors are present in the wilderness to reduce the effects on the undeveloped quality. Only up to eight hikes would occur each year over just two months, so visitors would not be exposed to the sights or sounds of vehicles most of the time.

Existing modern development within the wilderness, as described in table 5 of the "Affected Environment" section, would continue to adversely affect this quality in proposed wilderness.

Under this alternative, management zoning would be adjusted to better protect wilderness values. The Old Sewage Lagoons, Mesa Well Road, and the Former Residence and Access Areas would be reassigned from the administrative zone, which allows for development, infrastructure, and environmental modification, to the resource preservation management zone, which emphasizes the preservation of natural and cultural resources, including wilderness character. Management zoning for the north and south entrances, which are currently part of the overview zone, which allows for visitor services, developed sites, and modifications for visitor needs and monument operations, would also be adjusted so that areas within wilderness are zoned as part of the resource preservation zone. Making these changes to zoning would preclude future development within wilderness areas. A total of 177 acres would be added to the resource preservation management zone.

Cumulative Impacts — The “Environmental Trends and Planned Actions” section (above) and table 5 describe the impacts of past, ongoing, and reasonably foreseeable future actions, which would lead to the removal of existing modern development for areas included within the wilderness proposal, improving the undeveloped quality.

Within alternative B, any area where permanent modern development would continue to be present would be determined ineligible and not included within the proposal, and 2.65 miles of developed road would be abandoned and permitted to revegetate and no longer accommodate motorized use. Additionally, rezoning certain areas of the monument would preclude the potential for future development. As a result, alternative B would contribute cumulative beneficial effects on the undeveloped quality of the Wupatki wilderness.

When the impacts of past, present, and reasonably foreseeable future actions are paired with impacts of alternative B, the cumulative impacts on the undeveloped quality of wilderness character would be beneficial.

Alternative C

Under alternative C, fewer acres of the monument would be forwarded for inclusion in a wilderness proposal than in alternative B. A total of 33,851 acres, or 95.54%, of the monument would be included: 33,577 acres as proposed for immediate wilderness designation and 274 acres as proposed potential wilderness—suitable for wilderness designation once nonconforming uses or conditions have been eliminated. Lands proposed for wilderness, if designated by Congress, would enjoy the same protections for the undeveloped quality as described under alternative B. Within this alternative, a total of approximately 114.4 acres of development and 4.3 miles of road (not subject to motorized use) would remain within lands managed under NPS policy as wilderness.

Alternative C would not include 348 acres of eligible wilderness lands in a future wilderness proposal, many of which have existing and ongoing modern development, facilities, and nonconforming uses. This includes the entire 4.3-mile segment of Crack-In-Rock Road in study area 6, all of which would be removed from any category of wilderness. The road would continue to be maintained and used by motorized vehicles. Continued maintenance and use, even outside of wilderness, would adversely affect the viewscape and introduce sights and sounds of modern human occupation that would degrade the undeveloped character for those in nearby wilderness. However, the National Park Service would apply minimum requirements analysis to reduce the effects on the undeveloped quality, and only up to eight hikes would occur each year during just two months, so visitors would not be exposed to the sights or sounds of vehicle most of the time.

Existing modern development within the wilderness, as described in table 5 of the “Affected Environment” section, would continue to adversely affect this quality in proposed wilderness.

Further, excluding the entire Crack-In-Rock Road from wilderness would bisect a large portion of the wilderness, leading to smaller tracts of landscape possessing the undeveloped quality and feeling of wilderness.

Under this alternative, changes to zoning would be the same as defined under alternative B except as related to Crack-In-Rock Road, the entirety of which would remain in the

administrative zone. Because these lands would be ineligible under this alternative, this zoning would not further adversely impact the undeveloped quality of wilderness from what is described above.

Cumulative Impacts — The “Environmental Trends and Planned Actions” section (above) and table 5 describe the impacts of past, ongoing, and reasonably foreseeable future actions, which would improve the undeveloped quality of wilderness, as described under alternative B. Thus, when the beneficial impacts of these actions are combined with the beneficial effects of alternative C, the cumulative impact on the undeveloped quality would also be beneficial.

Alternative D

Under this alternative, the National Park Service would not submit the findings of the study to the NPS director at this time, and therefore, a wilderness proposal would not be forwarded to the secretary of the interior. However, the National Park Service would use information gained through the study to update the wilderness eligibility determination through a notice in the *Federal Register* to remove a total of 283 acres of lands that were previously identified in the 2022 determination as eligible for inclusion in the National Wilderness Preservation System. Removing these lands, which have ongoing nonconforming uses, including modern developments like roads, facilities, and ongoing motorized uses, would improve the undeveloped quality of the remaining 33,916 acres of eligible wilderness.

Existing modern development within the wilderness, as described in table 5 of the “Affected Environment” section, would continue to adversely affect this quality in remaining eligible wilderness areas.

Cumulative Impacts — “The Environmental Trends and Planned Actions” section (above) and table 5 describe the impacts of past, ongoing, and reasonably foreseeable future actions, which would improve the undeveloped quality of wilderness, as described under alternative B. Thus, when the beneficial impacts of these actions are combined with the beneficial effects of alternative D, the cumulative impact on the undeveloped quality would also be beneficial.

WILDERNESS CHARACTER: OTHER FEATURES OF VALUE (CULTURAL RESOURCES)

Affected Environment

The Wilderness Act defines wilderness as “an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which . . . generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable.” The act goes on to identify historical use as one of the six public purposes of the legislation. Cultural resources—which include archeological sites, historic structures, ethnographic resources, cultural landscapes, and continuing cultural practices—are resources created and cultivated by human beings. Recent guidance has articulated how cultural resources can contribute to wilderness character, noting that these resources are part of the larger transformative message of wilderness, “which is that our society has set aside wild places as part of America’s enduring heritage, some of which contain landscapes that have been anthropogenically modified or historically developed” (NPS 2022d).

Under NPS *Management Policies 2006*, cultural resources located within Wupatki National Monument's eligible wilderness are included in wilderness character monitoring. The monument's archeological record was identified in the Wupatki Wilderness Character Narrative as an "other feature of value" that contributes to the distinct character of the Wupatki eligible wilderness (Jordahl 2017). The monument's 2022 backcountry management plan (NPS 2021) includes cultural resources as part of the desired conditions for both the resource preservation zone and the discovery zone. The former affirms the importance of keeping these resources undisturbed by human impacts. The latter specifies that while minimal preservation techniques to prevent loss of essential materials will be adopted, cultural resources will be managed to allow human impacts that do not diminish condition or integrity. The desired conditions for the discovery zone further note that hikes will be routed to highlight important cultural resources and to minimize visitor impacts on the resources.

Other documentation speaks to the scale of Wupatki National Monument's cultural resources. The monument was administratively listed in the National Register of Historic Places in 1966. As of April 2024, 2,705 archeological sites had been documented at Wupatki, the majority of them in the monument's eligible wilderness. Masonry structures and surface artifacts, such as sherds and lithics, are scattered throughout the monument and are highly visible even to the untrained eye.

Artifacts in the region suggest a history of human habitation dating back as many as 12,000 years. Thirteen Native American Tribes consider Wupatki National Monument lands part of their ancestral home and cultural origins, and they remain connected to these lands. The natural features, landscape, and species found throughout the project area hold continued significance to these traditionally associated groups and are identified as ethnographic resources.

Structures at Wupatki National Monument include historic Navajo structures, as well as pre-contact standing masonry structures that date back thousands of years. As of April 2024, no cultural landscapes have been recorded in the monument's wilderness, though monument staff have reason to believe they exist.

Environmental Trends and Planned Actions

Any human activity in areas with archeological sites can cause damage to archeological resources. Surface artifacts, sensitive sites, and/or fragile resources are more prone to localized impacts. Anyone traveling in Wupatki National Monument's eligible wilderness—including professionals conducting permitted research activities and NPS staff performing routine activities—could potentially adversely impact sites. Surface artifacts are also at risk for trampling or unauthorized collection. However, these types of impacts are minimal because the backcountry is closed to the public, and NPS operations and research activities are limited in the eligible wilderness. Annual site monitoring, cyclic preservation projects, and research and resource management activities would continue under current management, providing opportunities to monitor and preserve archeological sites and structures and to gather knowledge about traditional knowledge associated with cultural resources in wilderness. Additionally, methods used in these activities preserve wilderness character (e.g., transporting materials by hiking in and the use of hand tools).

As described in the 2022 backcountry management plan, archeological sites could be damaged and artifacts lost with increased access, particularly if unguided access is allowed. However, indicators and thresholds have been developed to help mitigate adverse effects related to visitor use, and monument staff are collaborating with the monument's 13 associated Tribes regarding implementation of the backcountry management plan.

Changes in climate will likely impact cultural resources. Climate change experts predict hotter temperatures, drier conditions, and more intense precipitation events for northern Arizona (Baril et al. 2018; Gonzalez et al. 2018). Intensified storms and more extreme weather events are likely to amplify existing erosional impacts. A 2012 climate change vulnerability assessment determined that more than three-quarters of Wupatki National Monument's archeological sites alone were disturbed or threatened by erosion (Berry 2012). Although many of these sites have endured weathering for a thousand years, they are not immune to further deterioration at an accelerated rate. In addition, warming temperatures and prolonged periods of drought could result in more intense wildfires in the monument with dense or woody vegetation. Increased fuel loads of dried, drought-affected vegetation could allow fire to cover more acreage than it would under historical conditions. Wildfire can scorch surface artifacts and destroy architectural remnants. An update to the monument's fire management plan would provide more detailed analysis of some ways the National Park Service can best protect cultural resources in the Wupatki eligible wilderness in the era of climate change.

Impacts on Other Features of Value (Cultural Resources)

Alternative A: No Action (Continue Current Management)

Under alternative A, the 34,194 acres of eligible wilderness would continue to be managed as eligible, and no proposal for possible designation would be forwarded to the secretary of the interior. No changes to management zoning would be made under alternative A, and no new management actions related to the wilderness study would take place within Wupatki eligible wilderness. Management trends discussed under the environmental trends and planned actions would continue. Site disturbances can occur during guided visitor activities, although NPS staff presence in these activities limit adverse impacts. Should unguided access in areas of eligible wilderness be allowed, monument staff would follow the indicators and thresholds adopted in the 2022 backcountry management plan to mitigate adverse impacts in these areas.

Cumulative Impacts — Any adverse impacts from ongoing or planned actions would be minimal due to the mitigation measures outlined in the 2022 backcountry management plan. However, because no new management actions related to the wilderness study would take place within Wupatki eligible wilderness under alternative A, there would be no adverse cumulative impacts on other features of value (cultural resources).

Alternative B: NPS Proposed Action (Preferred Alternative)

Under the NPS preferred alternative, 33,916 acres, or 95.72%, of the monument would be forwarded to the director for inclusion within a wilderness proposal: 33,642 acres as proposed for immediate wilderness designation and 274 acres as proposed potential wilderness once nonconforming uses or conditions have been eliminated. Under this alternative, the existing protective measures for other features of value (cultural resources) in the monument's eligible

wilderness would be strengthened. Although the vast majority of monument lands are currently managed to preserve wilderness character under NPS policy, managing these lands pursuant to the Wilderness Act under alternative B would provide the highest level of protection to the monument's cultural resources. More of the monument's lands would be included as proposed wilderness or potential wilderness under alternative B than under any other alternative. In contrast, under the continuation of current management, no wilderness proposal would be included. Should Congress eventually designate these proposed lands as wilderness, it would ensure that modern development does not take place and that these lands "retain [their] primeval character and influence, without permanent improvements or human habitation." Preventing such developments would help ensure that these resources convey their cultural significance in perpetuity.

Under alternative B, some areas currently included within the administrative management zone or the overview zone would be rezoned to the resource preservation zone, which emphasizes the preservation of natural and cultural resources (see appendix E for zone descriptions). Therefore, there would be no adverse impacts, and potentially some beneficial impacts, on cultural resources associated with these management zone adjustments as compared to the continuation of current management.

Adverse impacts related to human behavior described under the no-action alternative would be possible under alternative B, as some visitor activities would continue in proposed wilderness. While adverse impacts on archeological resources are usually permanent and could destroy the research potential and integrity of archeological sites, these impacts are expected to be infrequent. Access for cultural practitioners would be unchanged from current conditions.

The first 1.65-mile segment of Crack-In-Rock Road, from the intersection with FR 545 (Loop Road), would not be proposed for wilderness designation under alternative B. This section of the road would continue to be a part of the administrative zone. In addition, motor vehicle use by NPS staff and permitted researchers would continue to be allowed on this segment of Crack-In-Rock Road. However, the remaining 2.65-miles of the road north of this section (to the monument boundary near the base of "the chimney") would be closed to all motorized travel and proposed for wilderness designation. Removing vehicle access from the 2.65-mile segment of the road would force any law enforcement patrols to take place on foot. This action would increase the time it would take to monitor resources, including natural and cultural resources, in the area. Delays in monitoring could potentially lead to adverse impacts on cultural resources in this area, though it is difficult to assess how these impacts could take place. Removing vehicles from this road, however, might also lead to some beneficial impacts on cultural resources.

Cumulative Impacts — Within alternative B, impacts on the other features of value (cultural resources) would largely mirror impacts under the no-action alternative. However, there would be additional protections associated with managing the lands in the proposed and potential wilderness pursuant to the Wilderness Act. Declassifying 2.65 miles of Crack-In-Rock Road and closing it to NPS and researcher traffic may also reduce adverse impacts on the cultural resources in the area. Closing these 2.65 miles to vehicles would lead to changes in how the cultural resources in the vicinity of this area are monitored. When the impacts from alternative B are paired with impacts from past, present, and reasonably foreseeable future actions, the cumulative impact on cultural resource conditions would be somewhat beneficial.

Alternative C

Impacts on other features of value (cultural resources) under alternative C would largely parallel the impacts under alternative B. The one exception is that under alternative C, the entire 4.3 miles of Crack-In-Rock Road in study area 6, from its intersection with FR 545 (Loop Road) to the monument's boundary near the base of "the chimney," would not be proposed for wilderness designation. The road would remain a part of the administrative zone and would remain open for use by NPS staff and permitted researchers. Keeping the entire road open would increase the likelihood that adverse impacts on cultural resources in the vicinity of the road would take place. However, in contrast to alternative B, keeping this entire stretch of Crack-In-Rock Road open would allow cultural resources in the area to be more easily monitored and provide easier access to traditional practitioners.

Cumulative Impacts — Within alternative C, the past, present, and reasonably foreseeable future actions for cultural resources would be similar to what is described in alternative B. Keeping all of Crack-In-Rock Road open to motorized travel by NPS staff and permitted researchers would continue to cause impacts on the cultural resources in the vicinity of the road. Allowing the entire length of the road (i.e., the 4.3 miles from FR 545 to the monument boundary included within study area 6 and the 0.78 miles in study area 7) to be used by NPS staff would, however, allow these resources, as well as the other cultural resources in the area, to be more easily monitored. When the impacts of past, present, and reasonably foreseeable future actions are paired with impacts of alternative C, the cumulative impacts on the other features of value (cultural resources) would be very similar to those under alternative B.

Alternative D

Under this alternative the National Park Service would update the wilderness eligibility determination to remove a total of 283 acres of lands, which have ongoing nonconforming uses such as infrastructure and modern development. No lands would be proposed for wilderness designation. Impacts on other features of value (cultural resources) under alternative D would largely mirror impacts under alternative A. Site monitoring, cyclic preservation projects, and research activities described under alternative A would all continue under alternative D. However, adjustments in management zoning are the same as under alternative B. No adverse impacts on cultural resources would be associated with this change, and it would include potentially some beneficial impacts.

Cumulative Impacts — Implementing management strategies described for alternative D could result in adverse impacts from current actions and trends; however, any impacts would be minimal due to the mitigation measures outlined in the 2022 backcountry management plan. Overall, when the impacts from alternative D are combined with impacts from past, present, and reasonably foreseeable future actions, there would be no cumulative impacts on other features of value (cultural resources), similar to alternative A.

Table 6. Summary of Environmental Impacts Across Alternatives

Wilderness Character Quality	Alternative A: No Action	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
Natural	In this alternative, the natural quality of wilderness character would continue to be degraded because of ongoing ecological impacts from the presence of modern buildings, roads, fences and related infrastructure and the presence of invasive plant species. Cumulative Impacts: Within the monument, as ecological conditions improve (e.g., recovered natural conditions), monument staff expect natural quality to improve within wilderness. However, the natural quality would be diminished due to expected impacts from regional development.	This alternative would most improve and preserve the natural quality of wilderness character because it includes a wilderness proposal and the greatest number of lands as proposed or potential wilderness. Alternative B would also improve this quality due to the closure of the 2.65 miles of Crack-In-Rock Road that would minimize disruption of habitat connectivity supporting the natural occurrence and destruction of plant and animal species and their movement. Changes in management zoning that recategorize lands in the administrative or overview management zones to the resource protection zone would stabilize or moderately improve the natural quality. Cumulative Impacts: The overall cumulative impacts on the natural quality of wilderness would be beneficial, but not substantially change the	This alternative would improve and preserve the natural quality of wilderness character but less so than alternative B because fewer lands are included as proposed or potential wilderness. Removing the full 4.3 miles of Crack-In-Rock Road from wilderness and continuing to allow motorized use would adversely affect this quality, as it would fragment more of the wilderness and habitat, affecting connectivity and ecological health. Changes in management zoning that recategorize lands in the administrative or overview management zones to the resource protection zone would stabilize or moderately improve the natural quality. Cumulative Impacts: The overall cumulative impacts on the natural quality of wilderness would be beneficial—though to a lesser extent than alternative B—and not substantially	This alternative would improve and preserve the natural quality of wilderness character but less so than alternatives B and C because no lands would be forwarded as proposed and potential wilderness. Changes in management zoning that recategorize lands in the administrative or overview management zones to the resource protection zone would stabilize or moderately improve the natural quality of eligible wilderness. Cumulative Impacts: The overall cumulative impacts on the natural quality of wilderness would be somewhat beneficial—though to a lesser extent than alternatives B and C—and not substantially change the negative impacts that are already occurring.

Wilderness Character Quality	Alternative A: No Action	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
		negative impacts that are already occurring.	change the negative impacts that are already occurring.	
Undeveloped	In this alternative, the undeveloped quality of wilderness character would continue to be degraded due to continued nonconforming modern developments within eligible wilderness. Cumulative Impacts: Once developments, such as the old sewage lagoons and modern infrastructure in the former residence, have been removed under planned actions, this quality would be improved.	This alternative would most improve and best preserve the undeveloped quality because it includes a wilderness proposal and the greatest quantity of lands as proposed or potential wilderness. While the undeveloped quality would continue to be degraded due to the presence of some modern development within wilderness (e.g., sewage lagoons, former residence, weather station), wilderness boundaries would be redrawn so that other lands with permanent modern development are no longer in wilderness (e.g., New Heiser Administrative Area, Woodhouse Mesa Administrative Area, permanent roads). Management zoning would be adjusted to better protect the undeveloped quality. Cumulative Impacts: Once developments, such as the old sewage lagoons and	This alternative would improve and preserve the undeveloped quality but less so than alternative B because fewer lands are included as proposed or potential wilderness. While the undeveloped quality is still degraded due to the presence of some modern developments within wilderness (e.g., sewage lagoons, former residence, weather station), wilderness boundaries would be redrawn so that other lands with permanent modern development (e.g., New Heiser Administrative Area, Woodhouse Mesa Administrative Area, permanent roads) would be excluded from wilderness. Management zoning would be adjusted to better protect the undeveloped quality. Cumulative Impacts: Once developments, such as the old sewage lagoons and modern infrastructure in the former residence, have been	This alternative would improve the undeveloped quality but less so than alternatives B and C because no lands would be forwarded as proposed and potential wilderness. While the undeveloped quality is still degraded due to the presence of some modern developments within wilderness (e.g., sewage lagoons, former residence, weather station), eligible wilderness boundaries would be redrawn so that other lands with permanent modern development are no longer in wilderness (e.g., New Heiser Administrative Area, Woodhouse Mesa Administrative Area, permanent roads). Management zoning would be adjusted to better protect the undeveloped quality. Cumulative Impacts: Once developments, such as the old sewage lagoons and modern infrastructure in the former residence, have been

Wilderness Character Quality	Alternative A: No Action	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
		modern infrastructure in the former residence, have been removed under planned actions, this quality will be improved.	removed under planned actions, this quality will be improved.	removed under planned actions, this quality will be improved.
Other Features of Value: Cultural Resources	In this alternative, other features of value in the Wupatki eligible wilderness would continue to be preserved due to ongoing monitoring, mitigations, and limited visitor access. Cumulative Impacts: As no new management actions related to the wilderness study would take place under alternative A, there would be no adverse cumulative impacts on other features of value (cultural resources).	This alternative would preserve and improve the other features of value quality of wilderness character because it includes the greatest amount of lands as proposed or potential wilderness. Declassifying portions of Crack-In-Rock Road and removing NPS and researcher vehicles from the road could provide beneficial impacts on cultural resources in the area. Alternatively, this change would make archeological monitoring or law enforcement responses to vandalism or looting in that area more challenging, which could result in adverse impacts. Rezoning some lands that are currently in the administrative or overview zones to the resource preservation zone could provide some beneficial	This alternative would preserve and improve the other features of value quality but less so than alternative B because fewer lands are included as proposed or potential wilderness. Continued motorized access for researchers and NPS staff along Crack-In-Rock Road would allow continued monitoring and law enforcement response to resource concerns. However, continuing to allow vehicles in this area could represent a continuing impact on some cultural resources in the area. Management zoning would be adjusted similar to alternative B, with the exception of Crack-In-Rock Road (discussed above). Cumulative Impacts: Similar to alternative B, the overall cumulative impacts on other features of value (cultural	This alternative would preserve the other features of value quality but less so than alternatives B and C because no lands would be forwarded as proposed and potential wilderness. As with alternative B, declassifying portions of Crack-In-Rock Road and removing NPS and researcher vehicles from the road could provide beneficial impacts on cultural resources in the area. However, as with alternative B, this closure would make archeological monitoring or law enforcement responses to vandalism or looting in the area more challenging, which could result in adverse impacts. Management zoning would be the same as in alternative B, which could provide some beneficial impacts on cultural resources.

Wilderness Character Quality	Alternative A: No Action	Alternative B: NPS Proposed Action (Preferred Alternative)	Alternative C	Alternative D
		impacts on cultural resources. Cumulative Impacts: The overall cumulative impacts on the other features of value (cultural resources) would be somewhat beneficial.	resources) under alternative C would be somewhat beneficial.	Cumulative Impacts: There would be no cumulative impacts on other features of value (cultural resources).

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Consultation and Coordination

4



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CHAPTER 4: CONSULTATION AND COORDINATION

AGENCIES AND GROUPS CONSULTED AND COORDINATED WITH DURING WILDERNESS STUDY DEVELOPMENT

Arizona Archeological Society Northern Arizona Chapter
Arizona Department of Game and Fish
Arizona State Historic Preservation Office
Babbitt Ranches
Coconino County Board of Supervisors, Districts 2 and 4
Flagstaff Area National Monuments Volunteers
Flagstaff Trails Initiative
Friends of Flagstaff Area National Monuments
Friends of Flagstaff's Future
Fort McDowell Yavapai Nation
Havasupai Tribe
Hualapai Tribe
Hopi Tribe of Arizona
Kaibab Band of Paiute Indians
Museum of Northern Arizona
National Parks Conservation Association
Navajo Nation
Navajo Nation Birdspring Chapter
Navajo Nation Cameron Chapter
Navajo Nation Coalmine Chapter
Navajo Nation Leupp Chapter
Navajo Nation Tolani Lake Chapter
Office of Flagstaff, Arizona, Mayor Becky Daggett
Office of US Senator Krysten Sinema (Arizona)
Office of US Senator Mark Kelly (Arizona)
San Carlos Apache Tribe of Arizona
San Juan Southern Paiute Tribe of Arizona
Sierra Club
Tonto Apache Tribe of Arizona
Turrell Land Company/Roden Crater
US Fish and Wildlife Service, Arizona Ecological Services Field Office
US Forest Service, Coconino National Forest
White Mountain Apache Tribe

Western National Parks Association
Wilderness Society
Yavapai-Apache Nation
Yavapai-Prescott Indian Tribe
Zuni Tribe of the Zuni Reservation

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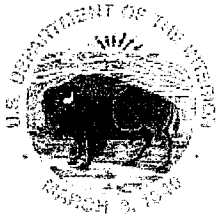
Appendixes



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APPENDIX A: 2013 WILDERNESS ELIGIBILITY ASSESSMENT

**WILDERNESS ELIGIBILITY ASSESSMENT FOR WUPATKI NATIONAL MONUMENT,
APPROVED MARCH 29, 2013**



United States Department of the Interior
NATIONAL PARK SERVICE
WUPATKI – SUNSET CRATER VOLCANO – WALNUT CANYON
NATIONAL MONUMENTS
6400 North Highway 89
Flagstaff, Arizona 86004



December 19, 2012

MEMORANDUM

To: Director, National Park Service

Through: Regional Director, Intermountain Region

From: Superintendent, Wupatki National Monument

Subject: Wilderness Eligibility Assessment for Wupatki National Monument

The Wilderness Act and NPS *Management Policies 2006* require that the National Park Service (NPS) review all areas within units of the national park system to determine if any meet the criteria for wilderness designation. The Wilderness Act of 1964 defines wilderness as "...an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation which is protected and managed so as to preserve its natural conditions...." [16 U.S.C. 1131(c)].

A wilderness eligibility assessment is a coarse evaluation of whether or not areas in a park should be considered for wilderness designation. This managerial evaluation is the first step under NPS policies in preparing a more detailed wilderness study with full public involvement for the monument.

A wilderness suitability study for Wupatki National Monument (hereinafter referred to as "Wupatki" or "the monument") was completed in 1971. At that time, lands within the monument were not considered suitable as wilderness. However, a re-examination of wilderness eligibility for lands included in Wupatki is needed at this time for a number of reasons, including: the completion of a General Management Plan (2002) in which wilderness eligibility was not addressed, the addition of new lands to the monument in 1996, and the removal of livestock grazing from the monument in 1989.

The Flagstaff Area National Monuments staff has determined approximately 34,194 acres, or 96.5% of total Wupatki acreage, is eligible for wilderness designation. In addition, staff determined 1,230 acres, or 3.5% of total Wupatki acreage, is not eligible.

Overview of the Monument, Values, and Significance

Wupatki National Monument was established by Presidential Proclamation No. 1721 on December 9, 1924, as two parcels to preserve the Citadel and Wupatki prehistoric

WUPA Wilderness Eligibility Assessment

pueblos. It was subsequently enlarged by Presidential Proclamation No. 2243 on July 9, 1937. On January 22, 1941, Wupatki was reduced in size by Presidential Proclamation No. 2454. Public Law 87-134 in 1961 enlarged the area again, to preserve additional archeological resources. Public Law 104-33, the Omnibus Parks and Public Lands Management Act of 1996, revised the boundaries yet again. The monument now comprises 35,423.59 acres adjacent to the Coconino National Forest, the Navajo Indian Reservation, Arizona State lands, and private lands.

Wupatki and the surrounding area contain thousands of archeological sites, dating mostly to the period after the eruption of the Sunset Crater Volcano, approximately A.D. 1085 (Elson et. al 2011). The monument contains an exceptionally well-preserved archeological landscape, including large residential sites, isolated field structures, ceremonial ballcourts, lithic quarries, agricultural fields, shrines, rock art, and other features created primarily during the 12th and 13th centuries. The density of archeological sites in this area is astounding (in some cases, there are more than 100 sites per square mile, and typically more than 40 sites per square mile). In the American Southwest, Mesa Verde National Park is one of the few places that rivals the density and preservation of Wupatki's archeological resources.

The dense concentration of prehistoric remains, their exceptional state of preservation, and the relatively large number of sizable remains with intact standing architecture were key factors influencing the creation of Wupatki. These original values persist to the present day. The archeological sites in the monument retain a high degree of integrity and relatively few of the sites have been excavated. Most retain their original masonry architecture and a more or less complete assemblage of artifacts.

The three main cultural groups identified by archeologists at Wupatki are the Ancestral Pueblo, Cohonina, and Sinagua. Outside the established boundaries of Wupatki, the vast majority of the more than 5,000 sites in the area between the south boundary of Wupatki and north boundary of Sunset Crater Volcano National Monument are direct extensions of the larger Wupatki settlement system.

Several historic sites have also been identified within the monument boundaries. Many of which are associated with the early Navajo inhabitants. In addition to the prehistoric and historic sites, other Wupatki resources are of traditional importance to the Native American tribes of the area. Numerous plant species were traditionally used by Navajos and Hopis, and many of these plants continue to have importance for medicinal and ceremonial purposes. Today, owing to the fact that grazing is no longer permitted in the monument, several culturally important plant species are found in much greater abundance within the monument than outside it.

The Wupatki grassland remains in relatively pristine condition compared with most grasslands on the Colorado Plateau, the majority of which have experienced invasion by a number of nonnative species, including brome grasses. The Wupatki grassland is still dominated by native perennial bunchgrasses, and it continues to be the focus of a number of research projects because of its scientific value as relatively pristine native grassland.

WUPA Wilderness Eligibility Assessment

Today, the open Wupatki grasslands provide important habitat for American pronghorn (also known as antelope). Habitat for pronghorn has diminished throughout Arizona in recent years because of expansion of housing developments, highway construction, and cross-fencing of formerly open range land. As habitat has been lost elsewhere, the relative importance of the Wupatki grassland as antelope habitat has increased.

Springs and seeps are extremely rare in the region. Historically, these water sources were extremely important to wildlife as well as to the human inhabitants of Wupatki. Most of the major seeps or springs at Wupatki were historically developed as water supplies for early cattle ranches, Navajo sheep herding, and later for NPS operations. These uses no longer occur at these spring sites. Although they are gradually returning to more natural conditions, the water table that feeds the springs has steadily declined over the last 40 years, and surface water is no longer available to wildlife.

The largely undeveloped terrain, unpolluted air, and extensive scenic vistas of Wupatki preserve a setting similar to that experienced by the prehistoric occupants. As the population of the Western United States continues to grow, opportunities to see for more than 60 miles, to view a natural landscape unmarred by modern intrusions, to enjoy a night sky unpolluted by urban light sources, and to encounter natural quiet are becoming increasingly rare. As these opportunities have decreased elsewhere, the value of Wupatki's natural vistas and soundscapes has increased in importance. This natural landscape and its associated visual and auditory values provide a rare baseline against which to measure and monitor regional environmental trends.

Wupatki National Monument Wilderness Eligibility Assessment

The Wilderness Act defines wilderness as "...an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation which is protected and managed so as to preserve its natural conditions...." [16 U.S.C. 1131(c)]. For the purposes of analyzing wilderness eligibility, monument lands were divided into roadless and undeveloped areas using Geographic Information System software (GIS). The first step in the GIS-based analysis was to delineate the administrative use areas, developed areas, visible above-ground utilities, and active transportation routes within the park. Data from GPS field-mapping, USGS topographic maps and aerial photography, existing park GIS data, and data from the Arizona State Land Department was used to delineate these areas. A 100-foot offset was created around all roads, administrative areas, developed areas, and electrical lines as areas ineligible for wilderness. However, it is the monument's intention to remove the above ground utilities when the monument becomes self-sufficient and "off-the-grid." This analysis resulted in four areas being identified as eligible wilderness. Two of these areas are larger than 5,000 acres and the two other areas are 1,929 acres and 4,813 acres. Each eligible and ineligible wilderness area (see Table 1) was analyzed by the Flagstaff Area National Monuments staff based upon guidance and policy set forth in the Wilderness Act and the NPS *Management Policies 2006*.

WUPA Wilderness Eligibility Assessment

NPS *Management Policies 2006* (6.2.1) direct that:

National Park Service lands will be considered suitable for wilderness if they are at least 5,000 acres or of sufficient size to make practicable their preservation and use in an unimpaired condition, and if they possess the following characteristics:

- The earth and its community of life are untrammelled by humans, where humans are visitors and do not remain;
- The area is undeveloped and retains its primeval character and influence without permanent improvements or human habitation;
- The area generally appears to have been affected primarily by the forces of nature, with the imprint of humans' work substantially unnoticeable;
- The area is protected and managed so as to preserve its natural conditions;
- The area offers outstanding opportunities for solitude or a primitive and unconfined type of recreation.

Eligible Wilderness Units

Using the criteria from NPS *Management Policies 2006* and the Wilderness Act, the Flagstaff Area National Monuments staff has determined that significant portions of Wupatki are eligible for wilderness designation (all acreage figures are approximate). Areas determined to be eligible for wilderness designation total 34,194 acres or 96.5% of Wupatki's total of 35,424 acres.

Table 1: Suitable Wilderness Areas

Unit Name	Wilderness Eligibility	Approximate Acreage
Area 1	Eligible	6,284
Area 2	Eligible	21,168
Area 3	Eligible	1,929
Area 4	Eligible	4,813
Total Acreage:		34,194

- Wilderness Area 1: 6,284 acres. This area contains outstanding grassland resources with some juniper savanna in the eastern portions. The landscape is dominated by basalt mesas and offers prime habitat for pronghorn antelope. The area is largely undeveloped and retains most of its primeval character. Wilderness Area 1 is protected and managed to protect pronghorn habitat and sensitive cultural resources. The western-most portion of this area is affected by the presence of Highway 89.
- Wilderness Area 2: 21,168 acres. Almost the entire area is undeveloped, with few signs of people and one rarely used administrative road (Crack-in-Rock Road). This area generally appears to be affected primarily by natural forces. The area offers a variety of habitats including pristine grassland, juniper savanna, and cold desert scrub, and is bisected by a prominent geologic feature known as the Doney monocline. The monocline contains deeply

incised washes including Antelope Wash, and outstanding views of the Painted Desert, Little Colorado River valley to the north and east, and the San Francisco Peaks to the south. Spectacular features found in this area include red formations of Moenkopi sandstone and areas such as Deadman Wash, which extends from well south of the monument around the north side of the San Francisco Peaks, all the way to the Little Colorado River.

- Wilderness Area 3: 1,929 acres. Wilderness Area 3 surrounds Wupatki's primary interpretive feature, the Visitor Center, and the housing area. Some development has occurred within this area to support monument operations; however it is confined to the Wupatki Visitor Center area and on top of Woodhouse Mesa. One above ground utility line runs to Woodhouse Mesa, however, as the monument strives to become more energy efficient and self-sufficient, it will pursue removing the above ground line. The rest of the area consists of Doney Mountain and Deadman Wash. Although this wilderness area is less than 5,000 acres, this area can be managed as wilderness because the landscape is homogenous with the surrounding eligible wilderness areas, but is bisected by the primary road that goes through Wupatki. This area has many locations not affected by modern development and the potential for seclusion exists in Wilderness Area 3. The area outside of the administrative zones is undeveloped and is affected primarily by natural forces.
- Wilderness Area 4: 4,813 acres. This area contains outstanding Moenkopi sandstone outcrops and deep washes. The landscape is dominated by basalt mesas and offers prime locations for isolation and quiet. The area is largely undeveloped and retains most of its primeval character except for an interpretive pueblo site with associated parking area and access road (Wukoki Pueblo), a small administrative area used for maintenance activities (New Heiser) and a special use permit residence with associated road access. At the expiration of the special use permit for the residence, the area will be rehabilitated to restore natural conditions.

Non-Eligible Wilderness Units

The Flagstaff Area National Monuments staff has determined that 3.5% (1,230 acres) of the monument is ineligible for wilderness designation. These areas are located primarily on the west end of the monument adjacent to Highway 89 and around developed NPS infrastructure. These non-eligible areas contain developments including the Visitor Center, maintenance area, utilities, and other administrative use areas that do not meet wilderness eligibility criteria defined in the Wilderness Act or in NPS *Management Policies 2006*. In addition, several roads are located in these areas and are maintained for monument and adjacent landowner use.

Public Notification

The public was notified of this eligibility assessment on November 16, 2012, through local media and via a notification letter to interested stakeholders of the Flagstaff

WUPA Wilderness Eligibility Assessment

Area National Monuments. Comments have been received from local and state governments, tribal governments, local environmental groups, and federal agencies. All comments have expressed neutral or positive responses.

Summary

The Flagstaff Area National Monument staff has determined approximately 34,194 acres or 96.5% of total monument acreage is eligible for wilderness designation. In addition, monument staff determined 1,230 acres or 3.5% of total monument acreage is not eligible for wilderness designation.

With your approval, per NPS policy, a Federal Register notice will be prepared documenting that a wilderness eligibility determination has been completed. The Flagstaff Area National Monuments staff will then prepare a draft wilderness study, which will be integrated with other planning documents for Wupatki National Monument.

If you have any questions regarding the Wupatki National Monument wilderness eligibility assessment, please contact Diane Chung, Superintendent, Flagstaff Area National Monuments (928-526-1157 x227), Lisa Leap, Flagstaff Area National Monuments, Chief of Resources Management (928-526-1157 x222), or Joshua Kleinman, Flagstaff Area National Monuments, Planning and Compliance Program Manager (928-526-1157 x270).

Diane Chung 12/19/12
Diane Chung Date
Superintendent

John Wessels 3/8/13
John Wessels Date
Regional Director, Intermountain Region
Concurred: ☒ Not Concurred: ☐

Jonathan Jarvis 3/29/2013
Jonathan Jarvis Date
Director, National Park Service
Concurred: ☒ Not Concurred: ☐

WUPA Wilderness Eligibility Assessment

REFERENCES

Elson, Mark D. (editor)

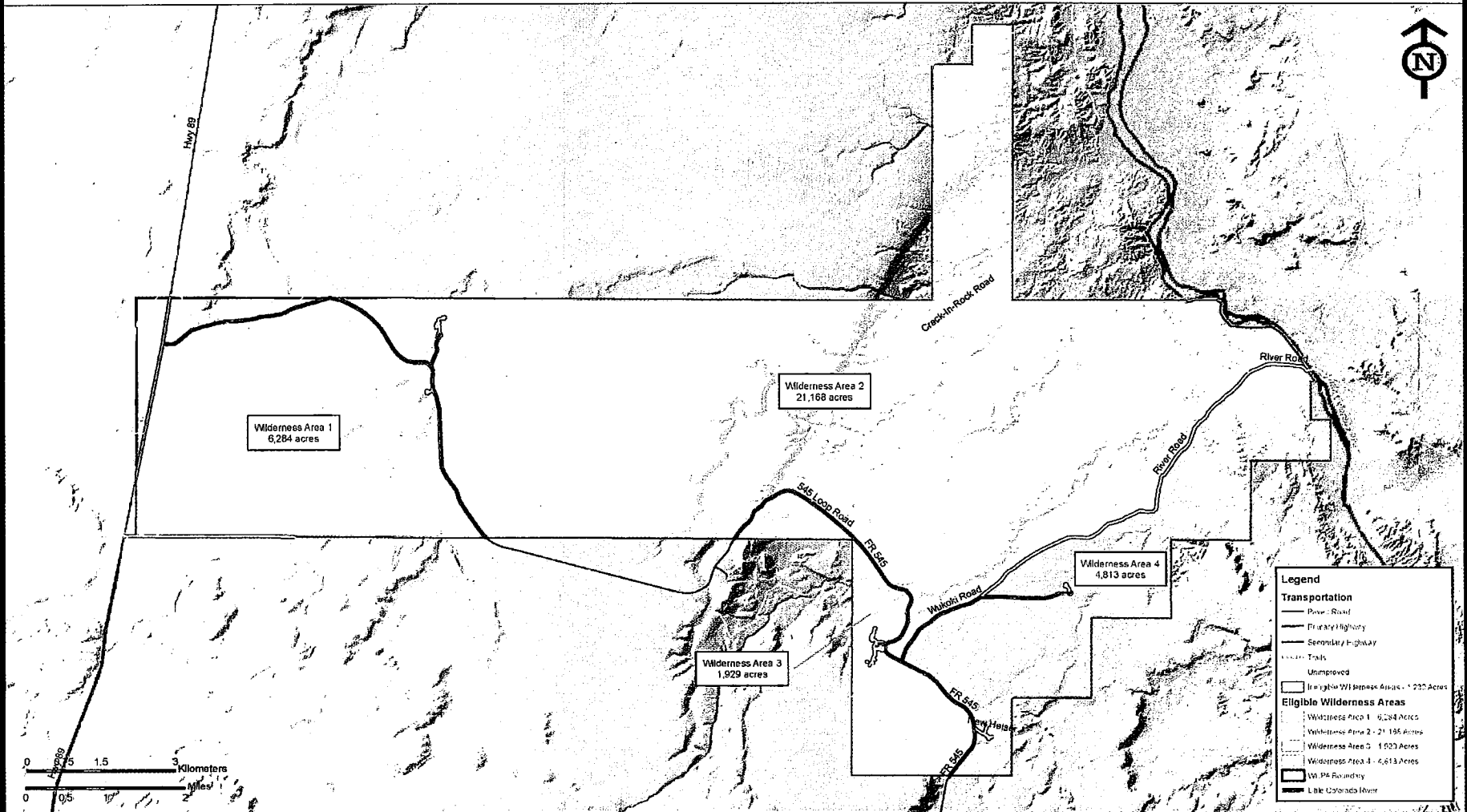
2011 Sunset Crater Archaeology: The History of a Volcanic Landscape. Center for Desert Archaeology Anthropological Papers No. 37. Submitted to Arizona Department of Transportation, Contract No. 97-41. Copies available from Center for Desert Archaeology, Tucson.

National Park Service

1971 *Wilderness Recommendation, Wupatki National Monument*. Wilderness Suitability Assessment, Flagstaff, Arizona.



Wupatki Wilderness Eligibility Assessment - Total Eligible Wilderness = 34,194 Acres



APPENDIX B: 2022 WILDERNESS ELIGIBILITY DETERMINATION

**DETERMINATION OF ELIGIBILITY FOR CONSIDERATION AS WILDERNESS AREAS,
WUPATKI NATIONAL MONUMENT,
FEDERAL REGISTER VOL. 87, NO. 142, JULY 26, 2022**

B. Solicitation of Public Comment

This notice is soliciting comments from members of the public and affected parties concerning the collection of information described in Section A on the following:

(1) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) If the information will be processed and used in a timely manner;

(3) The accuracy of the agency's estimate of the burden of the proposed collection of information;

(4) Ways to enhance the quality, utility, and clarity of the information to be collected; and

(5) Ways to minimize the burden of the collection of information on those who are to respond; including through the use of appropriate automated collection techniques or other forms of information technology, *e.g.*, permitting electronic submission of responses. HUD encourages interested parties to submit comment in response to these questions.

C. Authority

Section 3507 of the Paperwork Reduction Act of 1995, 44 U.S.C. chapter 35.

Anna P. Guido,

*Department Reports Management Officer,
Office of the Chief Data Officer.*

[FR Doc. 2022–16007 Filed 7–25–22; 8:45 am]

BILLING CODE 4210–67–P

DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs

[223A2100DD/AAKC001030/
A0A501010.999900]

Indian Gaming; Approval of Tribal-State Class III Gaming Compact in the State of Arizona

AGENCY: Bureau of Indian Affairs, Interior.

ACTION: Notice.

SUMMARY: This Notice publishes the approval of the Yavapai-Prescott Indian Tribe—State of Arizona Amended and Restated Gaming Compact (Compact) and the Agreement to Amend Compact (Amendment) between the Yavapai-Prescott Indian Tribe (Tribe) and the State of Arizona (State).

DATES: The compact and amendment take effect on July 26, 2022.

FOR FURTHER INFORMATION CONTACT: Ms. Paula L. Hart, Director, Office of Indian

Gaming, Office of the Deputy Assistant Secretary—Policy and Economic Development, Washington, DC 20240, (202) 219–4066.

SUPPLEMENTARY INFORMATION: Under section 11 of the Indian Gaming Regulatory Act (IGRA), Public Law 100–497, 25 U.S.C. 2701 *et seq.*, the Secretary of the Interior shall publish in the **Federal Register** notice of approved Tribal-State compacts for the purpose of engaging in Class III gaming activities on Indian lands. As required by 25 CFR 293.4, all compacts and amendments are subject to review and approval by the Secretary. The Yavapai-Prescott Indian Tribe and the State of Arizona agreed to the Compact and then to the Amendment. The Compact permits various types of gaming, including video devices, house banked card games, off-track pari-mutuel wagering, dealer controlled electronic games, sports wagering, fantasy sports contests, and live table games on the Tribe's Indian lands. The Compact includes provisions requiring the Tribe to pay the State from the Tribe's net win in exchange for substantial exclusivity in the State and for regulatory costs. The Compact provides that the Tribe will have the responsibility to administer and enforce regulatory requirements. The Amendment clarifies certain definitions and provisions in the Compact. The Compact and the Amendment are approved.

Bryan Newland,

Assistant Secretary—Indian Affairs.

[FR Doc. 2022–16024 Filed 7–25–22; 8:45 am]

BILLING CODE 4337–15–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–IMR–WUPA–32891; PPIMFLAGS2,
PPMPSPD1Z.YM]

Determination of Eligibility for Consideration as Wilderness Areas, Wupatki National Monument, Arizona

AGENCY: National Park Service, Interior

ACTION: Notice of Determination of Wilderness Eligibility for Lands in Wupatki National Monument.

SUMMARY: Pursuant to the Wilderness Act of 1964, and in accordance with National Park Service (NPS) Management Policies (2006), Section 6.2.1, the NPS has completed a Wilderness Eligibility Assessment to determine if lands within Wupatki National Monument (Wupatki or monument) meet criteria indicating

eligibility for preservation as wilderness.

ADDRESSES: A map of lands assessed is on file at Wupatki National Monument Headquarters, 6400 U.S. 89, Flagstaff, AZ 86004.

FOR FURTHER INFORMATION CONTACT:

Acting Superintendent Kristofer Butcher, Flagstaff Area National Monuments, 6400 U.S. 89, Flagstaff, AZ 86004, Telephone: 928–526–1157 or 205–410–3543, email address: Kristofer_butcher@nps.gov.

SUPPLEMENTARY INFORMATION: Wupatki National Monument has determined that a significant portion of the lands within the monument are eligible for wilderness designation. Areas determined to be eligible for wilderness designation total 34,194 acres or 96.5% of Wupatki's total 35,424 acres, with the remaining 1,230 acres or 3.5% of total monument acreage determined not eligible for wilderness designation.

Eligible wilderness areas at Wupatki National Monument are subdivided into the following areas:

Eligible Wilderness Area 1: 6,284 acres. This area contains outstanding grassland resources with some juniper savanna in the eastern portions. The landscape is dominated by basalt mesas and offers prime habitat for pronghorn antelope. The area is largely undeveloped and retains most of its primeval character. This area is managed to protect pronghorn habitat and sensitive cultural resources. The western-most portion of this area is affected by the presence of Highway 89 but is still eligible to be designated as wilderness.

Eligible Wilderness Area 2: 21,168 acres. Almost the entire area is undeveloped, with few signs of people and one rarely used administrative road (Crack-in-Rock Road). This area generally appears to be affected primarily by natural forces. The area offers a variety of habitats including pristine grassland, juniper savanna, and cold desert scrub, and is bisected by a prominent geologic feature known as the Doney monocline. The monocline contains deeply incised washes including Antelope Wash, and outstanding views of the Painted Desert, Little Colorado River valley to the north and east, and the San Francisco Peaks to the south. Spectacular features found in this area include red formations of Moenkopi sandstone and areas such as Deadman Wash, which extends from well south of the monument around the north side of the San Francisco Peaks, all the way to the Little Colorado River.

Eligible Wilderness Area 3: 1,929 acres. This area surrounds Wupatki

National Monument's primary interpretive feature, the Visitor Center, and the housing area. Some development has occurred within this area to support monument operations; however, it is confined to the Wupatki Visitor Center area and on top of the Woodhouse Mesa. One above ground utility line runs to Woodhouse Mesa, however, as the monument strives to become more energy efficient and self-sufficient, it will pursue removing the above ground line. The rest of the area consists of Doney Mountain and Deadman Wash. Although this wilderness area is less than 5,000 acres, this area can be managed as wilderness because the landscape is homogenous with the surrounding eligible wilderness areas but is bisected by the primary road that goes through Wupatki. This area has many locations not affected by modern development and the potential for seclusion exists in this area. The area outside of the administrative zones is undeveloped and is affected primarily by natural forces.

Eligible Wilderness Area 4: 4,813 acres. This area contains outstanding Moenkopi sandstone outcrops and deep washes. The landscape is dominated by basalt mesas and offers prime locations for isolation and quiet. The area is largely undeveloped and retains most of its primeval character except for an interpretive pueblo site with associated parking area and access road (Wukoki Pueblo), a small administrative area used for maintenance activities (New Heiser) and a special use permit residence with associated road access. At the expiration of the special use permit for the residence, the area will be rehabilitated to restore natural conditions.

In accordance with NPS Management Policies (2006), Section 6.2.2, Wupatki National Monument will prepare a wilderness study to determine if any portions of the monument should be recommended for inclusion in the National Wilderness Preservation System as defined in the Wilderness Act of 1964.

Charles F. Sams, III,

Director, National Park Service.

[FR Doc. 2022-15970 Filed 7-25-22; 8:45 am]

BILLING CODE 4312-52-P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 731-TA-718 (Fifth Review)]

Glycine From China; Scheduling of Expedited Five-Year Review

AGENCY: United States International Trade Commission.

ACTION: Notice.

SUMMARY: The Commission hereby gives notice of the scheduling of an expedited review pursuant to the Tariff Act of 1930 ("the Act") to determine whether revocation of the antidumping duty order on glycine from China would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time.

DATES: April 8, 2022.

FOR FURTHER INFORMATION CONTACT:

Tyler Berard (202-205-3354), Office of Investigations, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202-205-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000. General information concerning the Commission may also be obtained by accessing its internet server (<https://www.usitc.gov>). The public record for this review may be viewed on the Commission's electronic docket (EDIS) at <https://edis.usitc.gov>.

SUPPLEMENTARY INFORMATION:

Background.—On April 8, 2022, the Commission determined that the domestic interested party group response to its notice of institution (87 FR 112, January 3, 2022) of the subject five-year review was adequate and that the respondent interested party group response was inadequate. The Commission did not find any other circumstances that would warrant conducting a full review.¹ Accordingly, the Commission determined that it would conduct an expedited review pursuant to section 751(c)(3) of the Tariff Act of 1930 (19 U.S.C. 1675(c)(3)).

For further information concerning the conduct of this review and rules of general application, consult the Commission's Rules of Practice and Procedure, part 201, subparts A and B (19 CFR part 201), and part 207,

subparts A, D, E, and F (19 CFR part 207).

Please note the Secretary's Office will accept only electronic filings at this time. Filings must be made through the Commission's Electronic Document Information System (EDIS, <https://edis.usitc.gov>). No in-person paper-based filings or paper copies of any electronic filings will be accepted until further notice.

Staff report.—A staff report containing information concerning the subject matter of the review has been placed in the nonpublic record, and will be made available to persons on the Administrative Protective Order service list for this review on July 21, 2022. A public version will be issued thereafter, pursuant to section 207.62(d)(4) of the Commission's rules.

Written submissions.—As provided in section 207.62(d) of the Commission's rules, interested parties that are parties to the review and that have provided individually adequate responses to the notice of institution,² and any party other than an interested party to the review may file written comments with the Secretary on what determinations the Commission should reach in the review. Comments are due on or before July 28, 2022 and may not contain new factual information. Any person that is neither a party to the five-year review nor an interested party may submit a brief written statement (which shall not contain any new factual information) pertinent to the review by July 28, 2022. However, should the Department of Commerce ("Commerce") extend the time limit for its completion of the final results of its review, the deadline for comments (which may not contain new factual information) on Commerce's final results is three business days after the issuance of Commerce's results. If comments contain business proprietary information (BPI), they must conform with the requirements of sections 201.6, 207.3, and 207.7 of the Commission's rules. The Commission's *Handbook on Filing Procedures*, available on the Commission's website at https://www.usitc.gov/documents/handbook_on_filing_procedures.pdf, elaborates upon the Commission's procedures with respect to filings.

In accordance with sections 201.16(c) and 207.3 of the rules, each document filed by a party to the review must be served on all other parties to the review (as identified by either the public or BPI

¹ A record of the Commissioners' votes is available from the Office of the Secretary and at the Commission's website.

² The Commission has found the response to its notice of institution filed on behalf of GEO Specialty Chemicals, Inc., a domestic producer of glycine, to be individually adequate. Comments from other interested parties will not be accepted (see 19 CFR 207.62(d)(2)).

APPENDIX C: OTHER AREAS CONSIDERED DURING THIS WILDERNESS STUDY

In accordance with Director's Order 41: *Wilderness Stewardship*, section 5.1, and NPS *Management Policies 2006*, section 6.2.2, this wilderness study addresses the entirety of Wupatki National Monument, but especially the 34,194 acres that were previously determined to be eligible for the National Wilderness Preservation System. The 16 study areas described in chapter 2 of this study are located—in full or in part—on lands initially determined eligible in the 2022 eligibility determination. In addition, the study team also considered 7 areas that lie outside the boundaries for of the eligible wilderness identified in 2022 and, therefore, are not subject to NPS wilderness stewardship policy. Updated analysis confirmed that these 7 areas do not meet primary eligibility criteria contained in NPS policy section 6.2.1.1; therefore, the wilderness study does not propose these areas for wilderness. Instead, these areas will remain ineligible and will continue to be managed according to the NPS Organic Act and other laws and policies applicable to nonwilderness areas of the national park system. These 7 areas are described below.

STUDY AREA 17: FR 545 LOOP ROAD

The main road through Wupatki National Monument is FR 545 (the Loop Road). This paved road receives daily motorized use by the public. Per the 2004 general management plan, FR 545 is in the motorized sightseeing management zone. Consistent with NPS policy, the existing eligible wilderness boundary was drawn to exclude this road, including a 100-foot setback on either side of the centerline.

STUDY AREA 18: NORTHWEST CORNER OF THE MONUMENT

This study area includes lands in the northwest corner of Wupatki National Monument that were previously determined ineligible for the National Wilderness Preservation System. This area includes a narrow, triangular area to the west of US Route 89, which is a major regional transportation corridor, and the narrow area between FR 545 and the monument's northern boundary. As described in the 2013 wilderness eligibility assessment, several administrative roads in this area are maintained for monument operations and/or adjacent landowner use (NPS 2013a).

STUDY AREA 19: LOMAKI ROAD AND PARKING AREA

This study area includes the paved Lomaki Road, the paved visitor parking area where the trail to Lomaki Pueblo and Box Canyon Pueblos begins, and a vault toilet and picnic area located close to the parking area. Lomaki Pueblo and Box Canyon Pueblos are important and popular visitor destinations; nearly every day, visitors travel along this road to access these interpreted sites. Per the 2004 general management plan, the road and parking area are in the motorized sightseeing management zone. The established boundary for eligible wilderness was drawn to exclude this road, including a 100-foot setback on either side of the centerline, along with the parking area, vault toilet, and picnic area.

STUDY AREA 20: CITADEL AND NALAKIHU EXTENDED LEARNING ZONE

This study area corresponds to the extended learning management zone that includes Citadel and Nalakihi—a primary visitor use area located right off FR 545 in the western portion of the monument. There is a small, paved parking area and a hardened loop trail with interpretive signage leading to these pueblos. The established boundary for eligible wilderness was drawn to exclude this area, consistent with NPS policy 6.2.1.2, which states, “Historic features that are primary attractions for park visitors will generally not be recommended as eligible for wilderness designation.”

STUDY AREA 21: WUKOKI ROAD AND PARKING AREA

This paved road leads to Wukoki, an interpreted archeological site and one of Wupatki National Monument’s primary visitor destinations. From its intersection with FR 545 (Loop Road), the Wukoki Road leads northeast approximately 2.4 miles before it terminates in a paved parking loop with vault toilet. Per the 2004 general management plan, this road and parking area are in the motorized sightseeing management zone.

The established eligible wilderness boundary was drawn to exclude the road, parking loop, and toilet. The boundaries include a 100-foot setback on either side of the centerline of the road.

STUDY AREA 22: WUKOKI EXTENDED LEARNING ZONE

This study area includes the extended learning management zone to the north of the visitor parking area at the end of the paved Wukoki Road (see study area 21). Wukoki, an important frontcountry visitor destination, is located within this management zone, along with the trail that provides visitor access to this interpreted archeological site. This entire management zone lies outside the established boundary for eligible wilderness, consistent with NPS policy 6.2.1.2, which states, “Historic features that are primary attractions for park visitors will generally not be recommended as eligible for wilderness designation.”

STUDY AREA 23: BLACK FALLS CROSSING ROAD

Black Falls Crossing Road is a graded gravel road that cuts through the eastern half of the monument and provides access to the neighboring Navajo Nation, east of the Little Colorado River. This primitive road is not open to the public and is for NPS administrative use and Tribal use only. Monument staff and local residents drive this road using motor vehicles, and this use will continue. Per the 2004 general management plan, this road is in the administrative management zone. The established eligible wilderness boundary was drawn to exclude this road, including a 100-foot setback on either side of centerline.

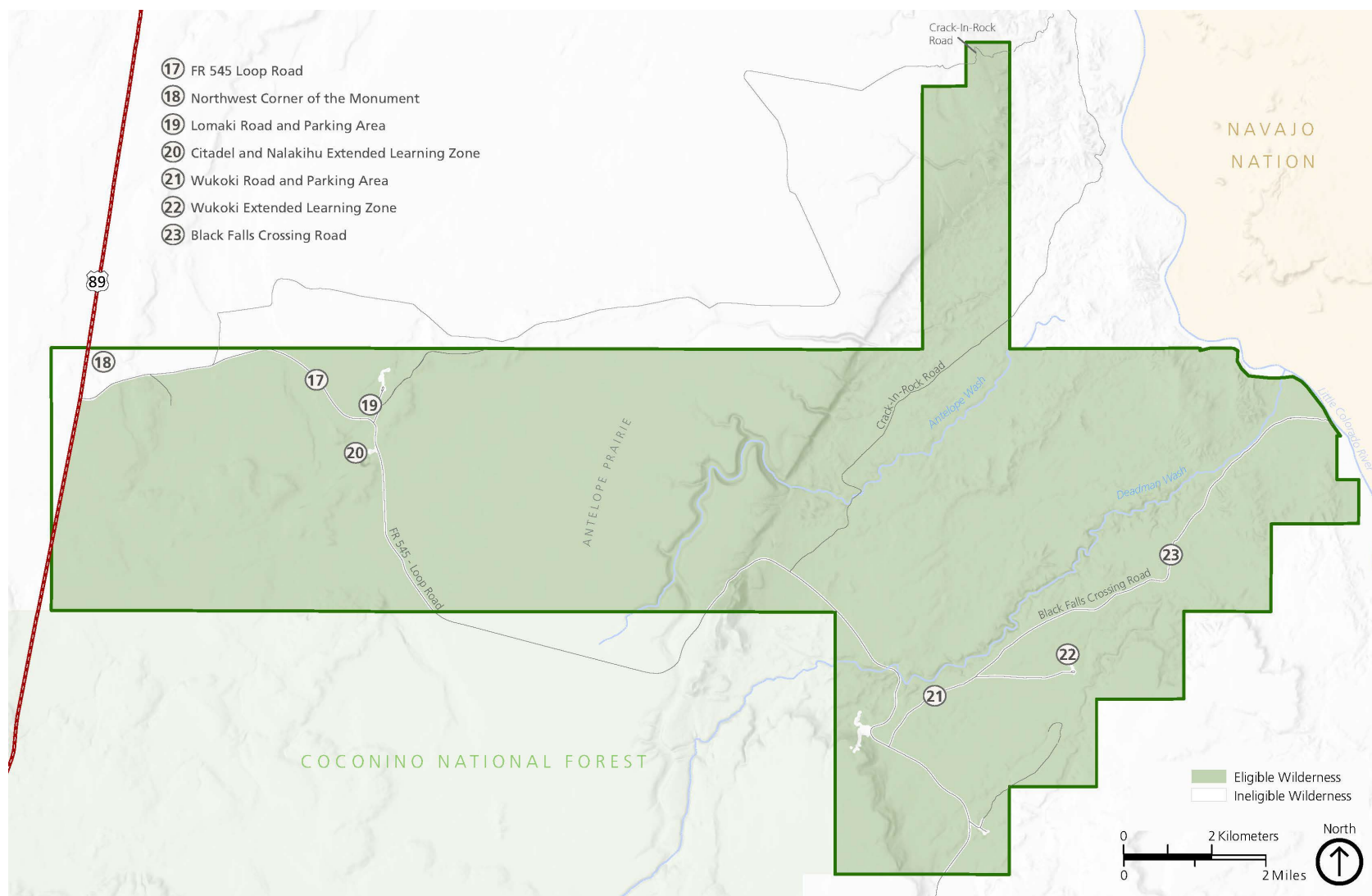


Figure C-1. Map of Study Areas 17–23 Located Outside Eligible Wilderness

APPENDIX D: ALTERNATIVES CONSIDERED BUT DISMISSED

The Council on Environmental Quality regulations for implementing the National Environmental Policy Act require federal agencies to explore and objectively evaluate all reasonable alternatives and briefly discuss the rationale for eliminating any actions that were not carried forward for further analysis. During the study process, some additional alternatives were considered but later dismissed from further consideration. These alternatives, and the reasons for dismissing them, are described below.

INCLUDE ALL AREAS PREVIOUSLY DETERMINED TO BE ELIGIBLE WILDERNESS IN A WILDERNESS PROPOSAL

Adopting the findings of the wilderness eligibility determination in full, and proposing wilderness for all areas that were previously determined eligible (34,194 acres), was dismissed from consideration because this would conflict with current NPS policy. The 2013 eligibility assessment and 2022 determination identified as eligible certain areas that this current wilderness study found do not meet the criteria and considerations described in NPS policy 6.2.1.1 and 6.2.1.2 as eligible for the National Wilderness Preservation System. These include areas with roads that are open to motorized travel, aboveground and buried utilities, and other modern infrastructure. Through more detailed analysis and discussion as part of this study, the interdisciplinary wilderness study team determined that a major change in policy or a policy waiver would be required to allow these uses to continue in proposed wilderness, both of which are speculative and unlikely to happen. Therefore, refinements were needed “to develop the recommendation to Congress for wilderness designation” (*NPS Management Policies 2006*, section 6.2.2), and this alternative was dismissed from further analysis.

DO NOT PROPOSE ANY LANDS IN WUPATKI NATIONAL MONUMENT FOR WILDERNESS DESIGNATION AND RELEASE ALL LANDS FROM WILDERNESS ELIGIBILITY

Releasing all lands previously determined to be eligible under the 2022 wilderness eligibility determination from consideration and recommendation to Congress for designation was dismissed from further analysis because it does not meet the purpose and need to formally study eligible wilderness areas, as required in the wilderness identification and designation process described in NPS policy (*NPS Management Policies 2006*, section 6.2, and Director’s Order 41: *Wilderness Stewardship*, section 5). The 2022 wilderness eligibility determination preliminarily concluded that approximately 96.5% of the monument, or approximately 34,194 acres, met the eligibility criteria for wilderness. While the more in-depth analysis in this wilderness study determined that refinements are needed to inform the NPS director’s proposal and eventually the president’s recommendation to Congress for wilderness designation, this analysis also confirmed that the majority of these lands do in fact possess wilderness character as described in NPS policy (see the primary eligibility criteria in NPS policy 6.2.1.1). This wilderness study proposes 33,916 acres (alternative B) for immediate or eventual wilderness designation because these lands meet criteria for wilderness. Therefore, not proposing any lands for wilderness

designation and releasing all lands from wilderness eligibility was dismissed from further analysis.

OTHER ALTERNATIVES CONSIDERED FOR SPECIFIC AREAS

Old Sewage Lagoons (study area 12): Do not include in a wilderness proposal and release from wilderness eligibility

The option to omit the old sewage lagoons from the wilderness proposal was considered but dismissed. Wupatki National Monument has been awarded funding and completed a categorical exclusion for a project to restore the old sewage lagoons and surrounding area to natural conditions. This project will restore the area's wilderness character such that it could be proposed as potential wilderness; thus, excluding study area 12 from the wilderness proposal would not meet the purpose and need of the study.

Crack-In-Rock Road (study areas 6 and 7): Declassify the entire road as a road and include it in proposed wilderness

Closing the entire length of Crack-In-Rock Road within monument boundaries (approximately 5.08 miles) and proposing these lands as wilderness was considered but dismissed. This option would prevent monument staff from using motorized vehicles on the road for operations and activities, including those that support visitor and staff safety, law enforcement efforts, and resource preservation projects. In the future, NPS staff and researchers will continue to drive on the first 1.65 miles of the road from its junction with FR 545 (Loop Road) to support resource management activities. Additionally, the National Park Service will continue to access the northernmost portion of "the chimney" (study area 7) via this road to support the popular Crack-In-Rock ranger-led hikes. As a result, it would be technically infeasible to implement this alternative while meeting NPS management objectives for the monument.

Mesa Well Road (study area 5): Do not propose for wilderness and release from wilderness eligibility OR propose as potential wilderness rather than proposed wilderness

The study team considered these options when there was the possibility of ongoing (temporary or continuing) nonconforming uses, such as motor vehicle use or intensive restoration activities. Through discussion, the team determined that the road was no longer needed for monument operations and that motor vehicle use would not occur in the future. Additionally, any future restoration needs will be modest. Therefore, including Mesa Well Road as proposed wilderness better meets the purpose and need of the study.

North and South Entrance Overview Zones (study areas 2 and 16): Do not propose any lands within the overview zone for wilderness and release from wilderness eligibility

Per the monument's 2004 general management plan, "... orientation and interpretation of primary park themes would be important elements" of the visitor experience in the overview management zone, and "orientation and interpretation facilities, such as visitor centers, kiosks, wayside exhibits, and other interpretive media would be appropriate." Built facilities, such as visitor centers, kiosks, and waysides, are incompatible with wilderness; therefore, NPS staff considered excluding lands in the overview zone (as currently defined at the beginning of this study) from the wilderness proposal. Upon consideration, this option was dismissed because

both the north and south entrance overview zones (study areas 2 and 16) contain undeveloped lands that meet wilderness criteria. In both locations, existing orientation facilities are modest (waysides) and are located outside eligible wilderness, within the 100-foot setback from the centerline of FR 545. Therefore, excluding the entire overview zone from the wilderness proposal does not meet the purpose and need of this study.

Old Weather Station Site (study area 1): Do not propose as wilderness and release from wilderness eligibility OR Propose as potential wilderness rather than proposed wilderness

Excluding the old weather station site in the southwestern corner of the monument from the wilderness proposal, or proposing this area as *potential* wilderness, was considered but dismissed. Abandoned equipment and infrastructure in this area are incompatible with wilderness character. However, NPS staff plan to remove the abandoned equipment and infrastructure soon, estimating it will take a six-person work crew just one day of work. Once removed, the area should return to a condition that meets wilderness eligibility criteria; thus, proposing this area for wilderness better meets the purpose and need for the study.

Confluence of Deadman Wash and Little Colorado River (study area 9): Do not propose for wilderness and release from wilderness eligibility

The 2022 wilderness eligibility determination identified the area where Deadman Wash meets the Little Colorado River as meeting criteria for wilderness eligibility. During development of this wilderness study, the possibility of excluding this area from the wilderness proposal (i.e., not proposing study area 9 for wilderness and releasing it from management considerations under NPS wilderness stewardship policy) was considered but dismissed. While the natural quality of wilderness character in the area has been severely degraded by the spread of invasive, nonnative vegetation, ongoing restoration techniques will improve the wilderness character of this area over time, and these techniques are consistent with *Reference Manual 41*, “Guidelines for Evaluating Ecological Intervention Proposals in National Park Service in Wilderness.”

Through careful analysis and discussion, the study team determined this area should be proposed as potential wilderness. Therefore, excluding the confluence of Deadman Wash and the Little Colorado River from the wilderness proposal would not meet the purpose and need of the study.

APPENDIX E: MANAGEMENT ZONING AND APPLICABLE DESIRED CONDITIONS PER THE 2022 BACKCOUNTRY MANAGEMENT PLAN

INTRODUCTION

Management zoning is the method used by the National Park Service to identify and describe the appropriate variety of resource conditions and visitor experiences to be achieved and maintained in the different areas of a park unit. Management zones describe compatible combinations of desired natural and cultural resource conditions, associated opportunities for visitor use and experience, and the kinds and levels of management, access, and development that are appropriate to achieve desired conditions.

The backcountry management plan, which was finalized with an approved finding of no significant impact in April 2022 (NPS 2022a), updated the monument’s management zone descriptions, geographic boundaries, and desired conditions. This appendix contains the management zone descriptions and desired conditions from the backcountry management plan, which remain in effect. More recently, during the development of this wilderness study, the National Park Service determined that additional refinements to management zone boundaries were needed in certain areas to preserve wilderness character. Updated management boundaries are included in chapter 2 of this wilderness study. (See “Figure 6. Map of Proposed Management Zoning in Alternative B: NPS Proposed Action (Preferred Alternative)” and “Table 2. Comparison of Alternatives by Study Area: Management Zoning.”)

MANAGEMENT ZONE DESCRIPTIONS AND ASSOCIATED DESIRED CONDITIONS FROM THE 2022 BACKCOUNTRY MANAGEMENT PLAN

The *Wupatki National Monument Backcountry Management Plan/GMP Amendment/Environmental Assessment* (approved in April 2022) includes updated descriptions for all six management zones in the monument—i.e., the resource preservation zone, extended learning zone, discovery zone, overview zone, administrative zone, and motorized sightseeing zone. The backcountry management plan also established desired conditions for cultural and natural resources, as well as for visitor experiences, that apply specifically to the three management zones within the project area of the backcountry management plan—i.e., the resource preservation zone, discovery zone, and extended learning zone. Management zone descriptions and applicable desired conditions are included below for reference.

Note: The text and tables below come directly from the backcountry management plan, which was completed before this wilderness study was initiated. Completion and approval of this wilderness study updates the content in some respects. Where “eligible wilderness” is mentioned, this would also apply to proposed and potential wilderness. Additionally, the wilderness study proposes adjustments to management zone boundaries, so acreages would be updated upon completion.

Resource Preservation Zone

Description

Lands in the resource preservation zone are managed to provide maximum preservation of fragile and/or unique resources, species of concern, traditional cultural landscapes, and other natural and cultural resources. In terms of total acreage, this management zone is the largest in the monument and includes natural and cultural features that contribute to the scenic diversity of the monument. Management action is dependent on resource needs, but natural processes are emphasized and left uninterrupted as much as possible. Resources include desert landscapes and ecosystems that provide habitat for diverse flora and fauna, as well as prehistoric and historic archeological sites and resources with continued cultural/ethnographic importance. National Park Service management activities include cultural resource preservation, resource inventory and monitoring, cooperative research, wildland fire management, and resource protection patrols. The vast majority of lands in this zone (approximately 29,810 acres; updated to approximately 30,651 acres in this wilderness study) are eligible wilderness;⁸ thus, the preservation of wilderness values and character is emphasized, and management activities that have the potential to affect wilderness character must be consistent with the minimum requirement concept described in *NPS Management Policies 2006*, section 6.3.5. Lands identified as eligible wilderness⁹ are managed as wilderness in accordance *NPS Management Policies 2006* and Director's Order 41: *Wilderness Stewardship*. The lands and resources in this zone are managed to preserve and protect wilderness values and resources, such as scenic views, wildlife habitat, natural systems, solitude, and cultural resources (other features of value).

Desired Conditions

Desired conditions applying specifically to the resource preservation zone are included in table E-1.

Table E-1. Desired Conditions Specific to the Resource Preservation Zone

Category	Desired Conditions for Resource Preservation Zone
Desired Resource Condition or Character	• Natural (physical or biological) resources run their life cycle with minimal intervention. • With the exception of minimal preservation techniques to prevent loss of essential materials, cultural resources remain undisturbed by human interaction. • The zone is predominantly natural, undeveloped, and untrammeled, preserving wilderness character. • Fragile and unique resources are protected and species of concern thrive and flourish. • The landscape provides habitat for local wildlife, such as pronghorn, golden eagle, prairie falcon, and Wupatki pocket mouse, and other native species sensitive to human land-use and habitat fragmentation impacts.

8. Updated to "are managed as wilderness under NPS policy" upon completion of the wilderness study

9. Updated to "Lands identified as eligible wilderness, proposed wilderness, or potential wilderness"

Category	Desired Conditions for Resource Preservation Zone
	• Areas may serve critical scientific research needs for pronghorn and regional environmental change. • This zone serves as a critical scientific research area for understanding Ancestral Puebloan settlement and subsistence patterns as well as cultural/social interactions and development.
Visitor Experience	• This zone does not support public use/access. Use is only permitted for approved research and Tribal uses. • The probability of any permitted researchers or Tribal members encountering NPS staff or other evidence of NPS management is moderate to low.
Appropriate Visitor Activities, Services, or Facilities	• No visitor facilities or other developments are appropriate in this zone. • No visitor activities are appropriate in this zone. • Only permitted uses by researchers and Tribal members or other NPS-sanctioned uses are allowed in this zone. • Protection of monument resources from visitor impacts is the priority for this area.

Discovery Zone

Description

Lands in the discovery zone are managed for the conservation of natural and cultural resources and to provide visitor opportunities to experience the backcountry and eligible wilderness. This zone includes natural and cultural features that contribute to the scenic diversity and value of the monument. The vast majority of lands in this zone (approximately 4,030 acres—updated to 4,034 acres upon completion of this wilderness study) are eligible wilderness;¹⁰ thus, the preservation of wilderness values and character is emphasized, and management activities that have the potential to affect wilderness character must be consistent with the minimum requirement concept described in *NPS Management Policies 2006*, section 6.3.5. Lands identified as eligible wilderness¹¹ are managed as wilderness in accordance with *NPS Management Policies 2006* and Director’s Order 41: *Wilderness Stewardship*. The lands and resources in this zone are managed to preserve and protect the values of wilderness such as scenic views, wildlife habitats, natural systems, solitude, and cultural resources (other features of value). Tolerance for resource degradation in this zone is low. Management activities that have the potential to affect wilderness character must be consistent with the minimum requirement concept described in *NPS Management Policies 2006*, section 6.3.5. No modern infrastructure exists (such as trails or other facilities, but minimal signage and markers to support wayfinding and visitor safety may be appropriate in some locations. These signs or markers would be designed to harmonize with the environment and not be visually intrusive. Access to this zone, including recreational uses such as hiking, wildlife and night sky viewing, and overnight camping as part of an NPS-led program, as well as research and traditional cultural activities, requires either a guide or a permit. The probability of encountering other groups is low, and there are some opportunities for individual

10. Updated to “are managed as wilderness under NPS policy” upon completion of the wilderness study

11. Updated to “Lands identified as eligible wilderness, proposed wilderness, or potential wilderness”

solitude. Resource protection and visitor safety are primary management goals for this zone; thus, visitor access would occur only seasonally to ensure there is no disruption to natural behaviors among species, such as pronghorn antelope or raptors, and to avoid monsoon season and unsafe temperatures. Additionally, the monitoring of resources would be conducted regularly based on established indicators and thresholds.

Desired Conditions

Desired conditions applying specifically to the discovery zone are included in table E-2.

Table E-2. Desired Conditions Specific to the Discovery Zone

Category	Desired Conditions for Discovery Zone
Desired Resource Condition or Character	• Natural (physical or biological) resources run their life cycle with minimal human intervention. • In addition to minimal preservation techniques to prevent loss of essential materials, cultural resources will be managed to allow human impacts at acceptable levels that do not diminish condition or integrity. • The zone is predominantly natural, undeveloped, and untrammeled, preserving wilderness character, but the sights and sounds of people can be present. • Hiking routes are located in areas that emphasize public safety. Hikes are routed to highlight important natural and cultural resources and to minimize visitor impacts on those resources.
Visitor Experience	• Visitors experience recreation in a natural setting that reflects all wilderness values, including a natural and undeveloped landscape, and opportunities for solitude and unconfined recreation. • The undeveloped terrain conveys wilderness values through sensory experiences, such as encountering natural sounds, dark night skies, olfactory sensations, and a sense of remoteness. • Visitors attain a sense of the past through encounters with prehistoric and historic structures, cultural landscapes, rock writings, and other archeological sites scattered throughout the backcountry, depicting the lives and cultures of the people who made Wupatki National Monument home. • Visitors are provided with the opportunity to experience viewscapes of desert grasslands, mesas, buttes, the Painted Desert, San Francisco Peaks, and volcanic hills. • Discovery hikes¹² provide visitors with interpretation of monument resources, are from moderate to strenuous difficulty, and require a moderate time commitment. The need for individual outdoor skills and self-reliance varies, providing some visitors with opportunities to engage those skills, and others with more facilitated experiences, requiring low-to-moderate outdoor skills. • Opportunities for solitude range from low to high.

12. The 2022 backcountry management plan uses the term “discovery hikes,” but in 2024, monument staff updated this to “ranger-led hikes.”

Category	Desired Conditions for Discovery Zone
	The probability of encountering other visitors, groups, or evidence of visitor impacts is low. The probability of encountering NPS staff and other evidence of NPS management activities, including routine backcountry patrols, is moderate to high.
Appropriate Visitor Activities, Services, or Facilities	- These areas are mostly free of trails and other developments in order to preserve viewsheds and the wilderness experience. No permanent facilities are present, except for primitive hiking routes and minimal signage or markers, as necessary for resource protection and visitor safety. - Hiking and guided overnight experiences are the predominant activities in these areas. - Low-level and low-impact visitor use is encouraged to minimize damage to sensitive resources.

Extended Learning Zone

Description

The extended learning zone includes visitor service areas and developed sites that support frequent and/or high levels of visitation. This zone is intensively managed to ensure resource protection and public safety, and resources could be modified for essential visitor needs (e.g., trails or interpretive media) and monument operations (e.g., hardening of archeological sites). Any changes to resources or facilities would be done in a way that harmonizes with the natural and cultural environment. The emphasis in this zone is for visitors to learn about, experience, and connect with significant monument resources. Predominant activities include viewing resources and attending interpretive walks and talks. Experiences in this area are either self-guided or ranger-led, and while structure and direction are provided (e.g., trails, interpretive media, signs), some opportunity for discovery is available. Facilities and services in this zone are typically formal and accessible, though some may be unimproved, but defined to support more formal recreation experiences.

Desired Conditions

Desired conditions applying specifically to the extended learning zone are included in table E-3.

Table E-3. Desired Conditions Specific to the Extended Learning Zone

Category	Desired Conditions for Extended Learning Zone
Desired Resource Condition or Character	- Natural resources (physical or biological) run their life cycle with moderate NPS intervention. Some cultural resources and archeological sites may be hardened. - The zone is developed to facilitate visitor access. Cultural resources are the predominant attraction. Sights and sounds of people and motor vehicles can be present. - Hiking trails or routes and interpretive media are in areas that ensure public education, resource protection, and public safety.

Category	Desired Conditions for Extended Learning Zone
Visitor Experience	• Visitors have the opportunity to explore and better understand monument resources through a self-guided or facilitated experience. • This zone includes development such as trails, waysides, and other infrastructure to support resource protection, visitor safety, and education around resources. • Visitors attain a sense of the past through encounters with and interpretation of awe-inspiring prehistoric and historic structures, cultural landscapes, and rock writings, which depict the lives and cultures of the people who have made Wupatki National Monument home. • Direct connection to resources without undue resource impacts is a key element of this experience. • Paths and trails are short, easy to moderate, and, to the extent possible, accessible to people of all abilities. Visitors must allow at least a moderate time commitment, though the need for individual outdoor skills is low. • Opportunities for solitude are low. At certain times of the day or season, there are opportunities for solitude, but in general, there is a moderate probability of encountering other visitors. • The probability of encountering other groups or NPS staff and evidence of visitor impacts is moderate to high.
Appropriate Visitor Activities, Services, or Facilities	• Interpretive media, restrooms, and small picnic areas can be present in this zone (near the road and car pulloffs). All developments and uses are harmonious with the natural and historic character of the monument. • Viewing resources and attending interpretive walks and talks are the predominant activities in these areas. • Moderate-to-high visitor use is appropriate in these areas, and management actions are undertaken to minimize resource impacts.

Overview Zone

Description

The overview zone includes areas where visitors are provided with an overview of monument resources and significance with minimal physical exertion such as the visitor center area and waysides at the monument's two main entrances. Resources would appear natural, but some areas may be paved to protect resources or other management actions taken, as necessary. Visitors interact with resources only to the extent possible without undue impact on those resources. Orientation and interpretation of primary monument themes would be important elements of this experience. Interaction and encounters with other visitors and monument staff would be common, but overcrowding would be avoided. Although structured, intimacy with some resources could be possible, viewing resources from a distance or from a trail or overlook facilities would be more common. Sightseeing, learning about the monument, short walks, and attending interpretive programs would be common activities in these areas. Orientation and interpretation facilities, such as kiosks, wayside exhibits, and other interpretive media, would be appropriate. Support facilities, such as restrooms, trash and recycling receptacles, and picnic facilities, could also be present.

Desired Conditions

Desired conditions specific to the overview zone were not developed in the 2022 backcountry management plan because these areas were not part of the project area.

Administrative Zone

Description

Areas and roads zoned as administrative are for NPS use and not intended for visitors. These areas include development to support monument operations and are located away from sensitive natural or cultural resources. The natural environment would be modified for monument operation needs, but they would be changed in a way that harmonizes with the surrounding environment. Facilities necessary for monument operations or surrounding land uses are appropriate in this zone, including monument maintenance yards, residential areas, access roads, and utility areas and corridors. Black Falls Crossing Road, which provides access to the neighboring Navajo Nation, is included in this zone because it is not intended to provide experiences for park visitors.

Desired Conditions

Desired conditions specific to the administrative zone were not developed in the 2022 backcountry management plan because these areas were not part of the project area.

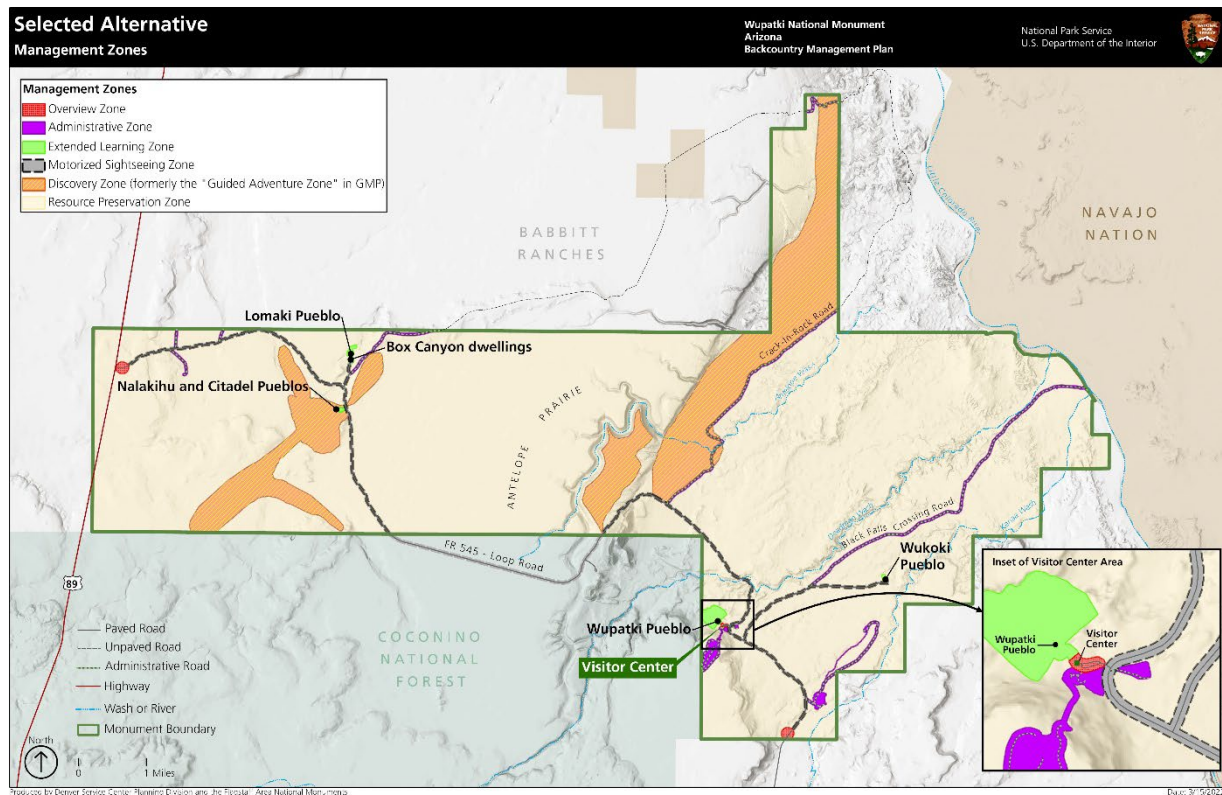
Motorized Sightseeing Zone

Description

The motorized sightseeing zone is a developed area that includes paved roadways and associated developments that visitors use for touring the monument, enjoying scenery, and gaining access to other areas. Intensive management would be provided in this area to ensure resource protection and public safety (e.g., fences, law enforcement, and restriction on visitor activities). Resources might be modified (e.g., paving or felling hazard trees) for essential visitor and monument operational needs. The visitor attractions would be convenient and easily accessible. The visitor experience would be generally dependent on a vehicle or bicycle and would involve traveling along a well-maintained, paved road. Observing the natural environment would be important, and there would be a sense of adventure but little need for visitors to exert themselves or apply outdoor skills. The probability of encountering other visitors would be high, and there would be a moderate probability of encountering NPS staff. Facilities include paved roads, pullouts, overlooks, short trails, picnic areas, parking areas, and other facilities that support visitor touring. Most facilities and portions of most trailheads or sidewalks in this area would be accessible to people of all abilities, including those with limited mobility.

Desired Conditions

Desired conditions specific to the motorized sightseeing zone were not developed in the 2022 backcountry management plan because these areas were not part of the project area.



**Figure E-1. Map of Approved Management Zoning from the Backcountry Management Plan
(Figure 1 from *Finding of No Significant Impact, Backcountry Management Plan/GMP
Amendment/Environmental Assessment*, April 2022)**

APPENDIX F: IMAGES OF STUDY AREAS



Figure F-1. Study Area 1: Old Weather Station



Figure F-2. Study Area 2: North Entrance Overview Zone



Figure F-3. Study Area 3: North Road



Figure F-4. Study Area 4: Lomaki Pueblo Extended Learning Zone



Figure F-5. Study Area 5: Mesa Well Road



Figure F-6. Study Area 6: Crack-In-Rock Road



Figure F-7. Study Area 7: Crack-In-Rock Road in the Northernmost Portion of “the Chimney”



Figure F-8. Study Area 8: Cattle Crossing Area



Figure F-9. Study Area 9: Confluence of Deadman Wash and Little Colorado River



Figure F-10a. Study Area 10: Woodhouse Mesa and Visitor Center Administrative Area (top of mesa)



Figure F-10b. Study Area 10: Woodhouse Mesa and Visitor Center Administrative Area (base of mesa)



Figure F-11a. Study Area 11: Ballcourt, Wupatki Pueblo Extended Learning Zone



Figure F-11b. Study Area 11: Historic Entrance Road Trace, Wupatki Pueblo Extended Learning Zone



Figure F-12. Study Area 12: Old Sewage Lagoons



Figure F-13. Study Area 13: Heiser Spring Restoration Area



Figure F-14. Study Area 14: New Heiser Administrative Area



Figure F-15. Study Area 15: Former Residence and Access



Figure F-16. Study Area 16: South Entrance Overview Zone

APPENDIX G: LARGE-SCALE MAPS

This appendix contains maps for areas where additional detail was desired beyond what is visible in the smaller scale maps elsewhere in this study. Each study area shown includes two maps. The first map compares the eligible wilderness boundary that was established before the wilderness study (i.e., alternative A) and the wilderness proposal that is included in the preferred alternative (alternative B). The second map shows the relationship between existing management zoning (alternative A) and proposed zoning (alternative B).

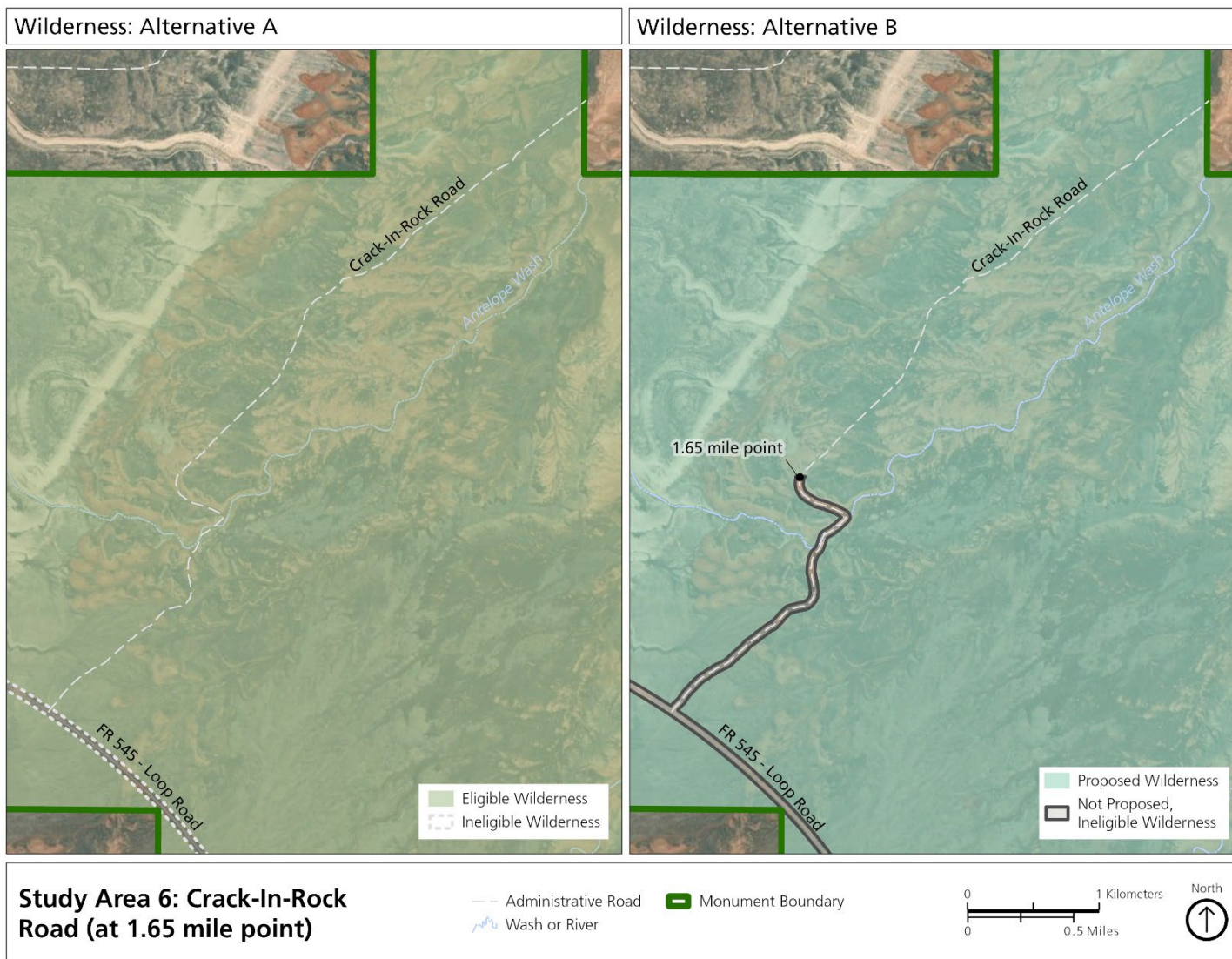


Figure G-1. Study Area 6: Crack-In-Rock Road (at 1.65 mile point) – Wilderness

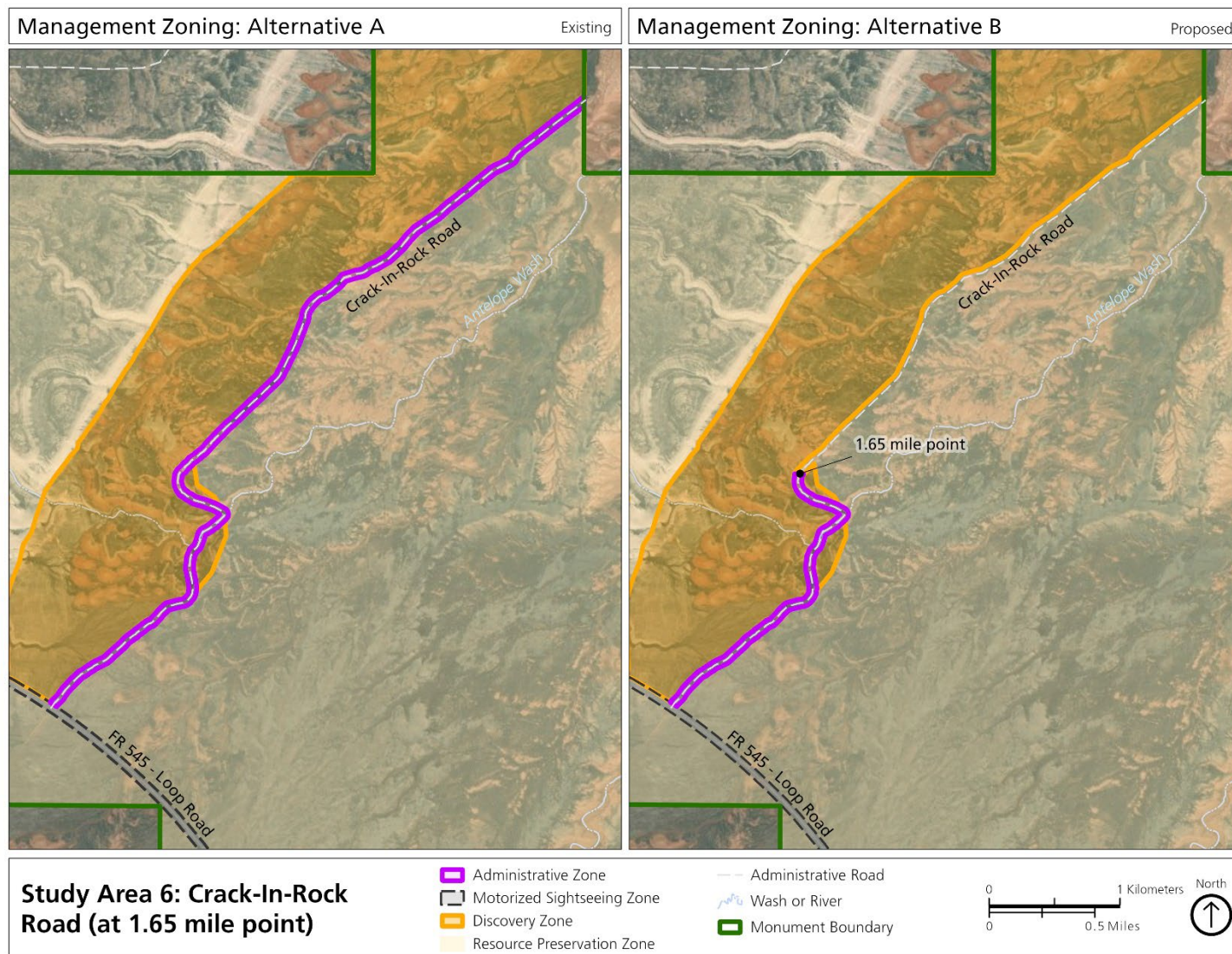


Figure G-2. Study Area 6: Crack-In-Rock Road (at 1.65 mile point) – Management Zoning

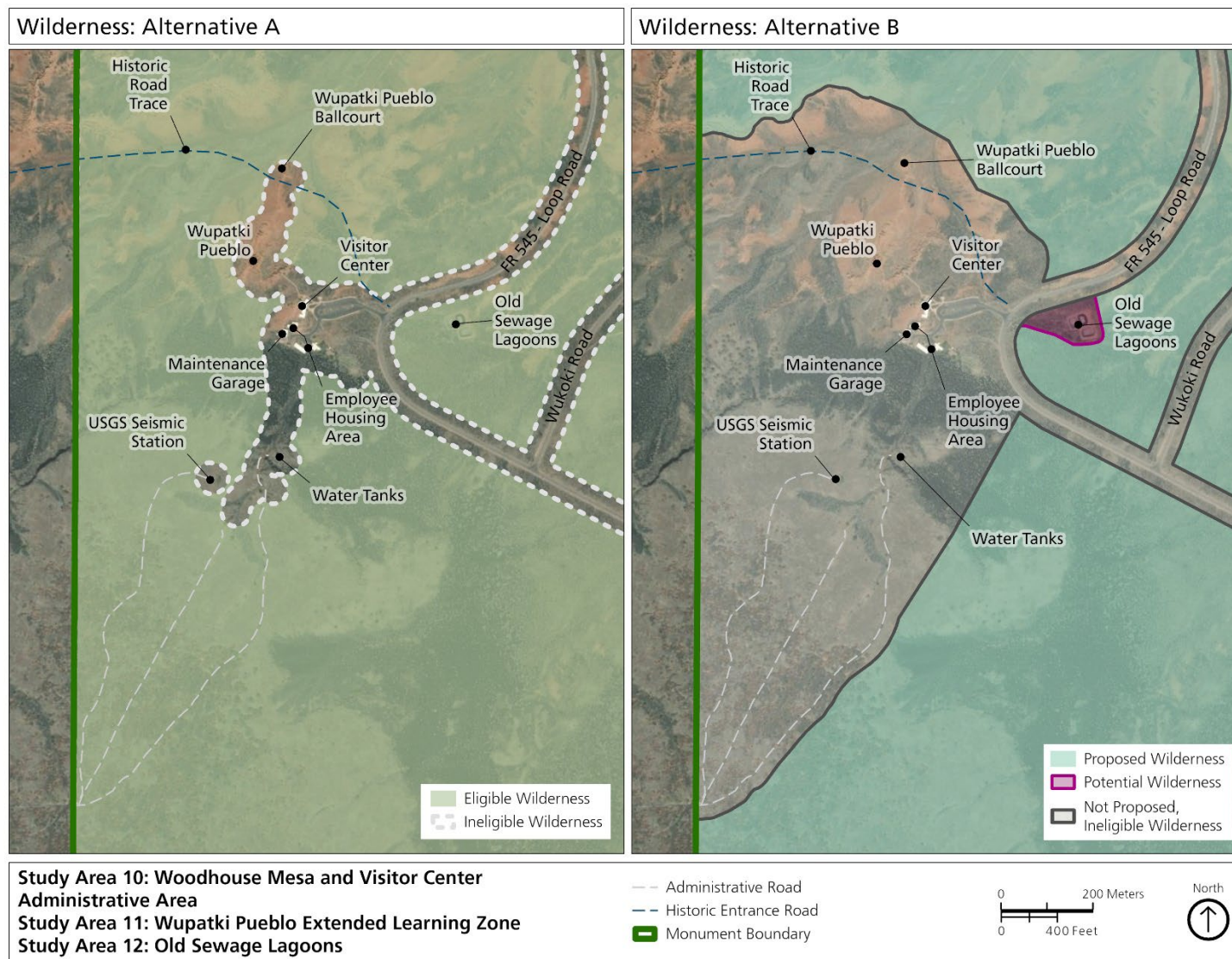


Figure G-3. Study Areas 10 (Woodhouse Mesa and Visitor Center Administrative Area), 11 (Wupatki Pueblo Extended Learning Zone), and 12 (Old Sewage Lagoons) – Wilderness

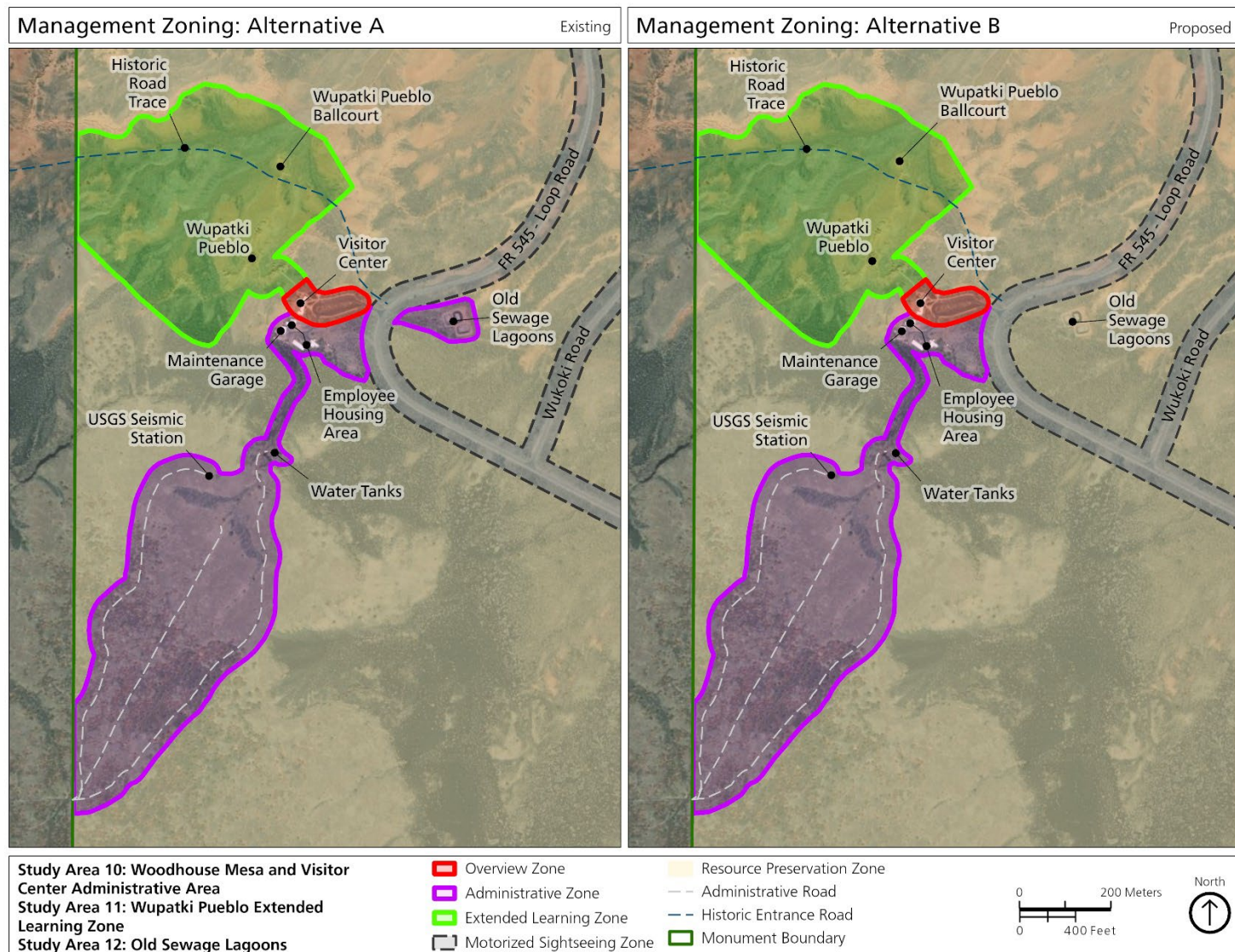


Figure G-4. Study Areas 10 (Woodhouse Mesa and Visitor Center Administrative Area), 11 (Wupatki Pueblo Extended Learning Zone), and 12 (Old Sewage Lagoons) – Management Zoning

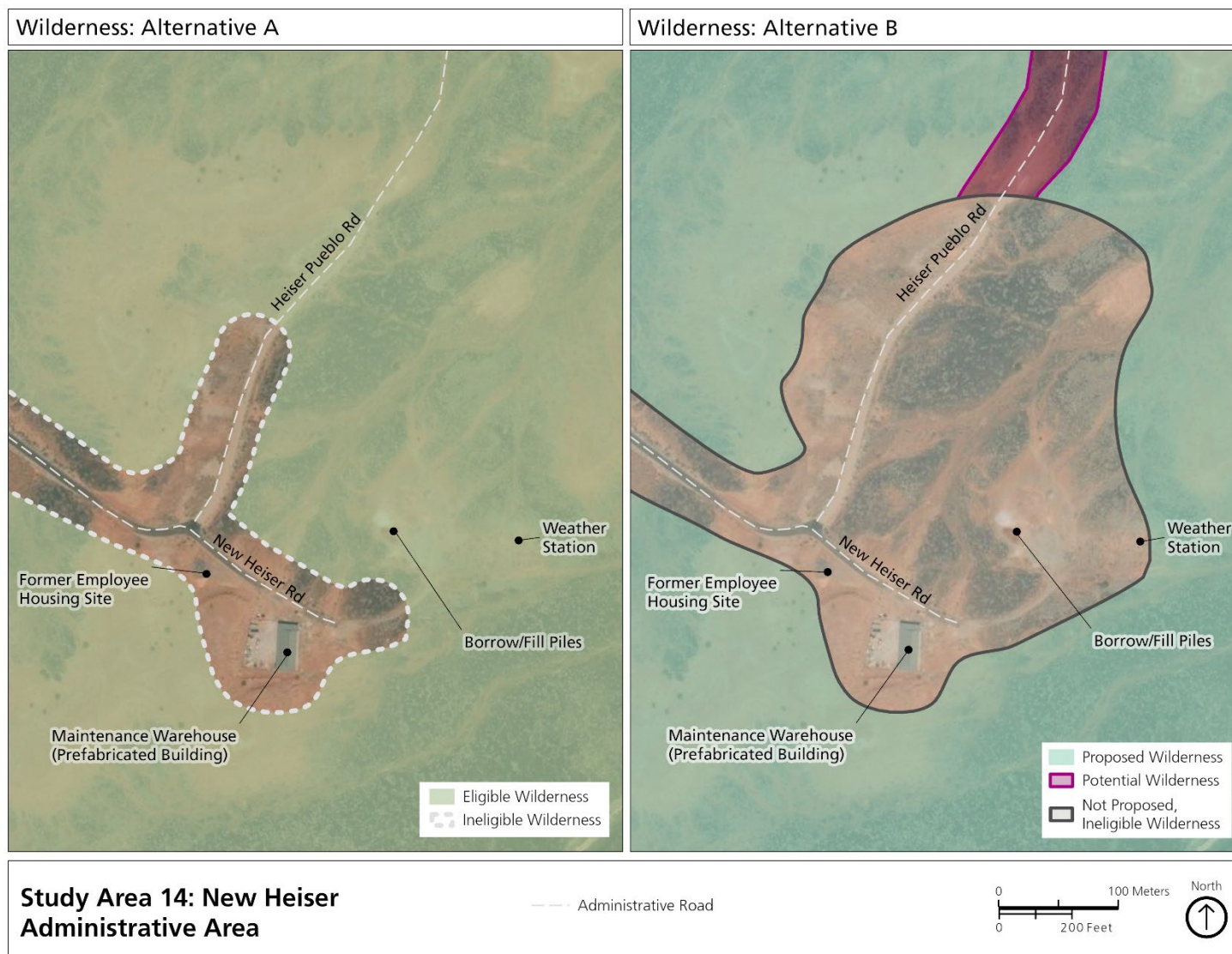


Figure G-5. Study Area 14: New Heiser Administrative Area – Wilderness

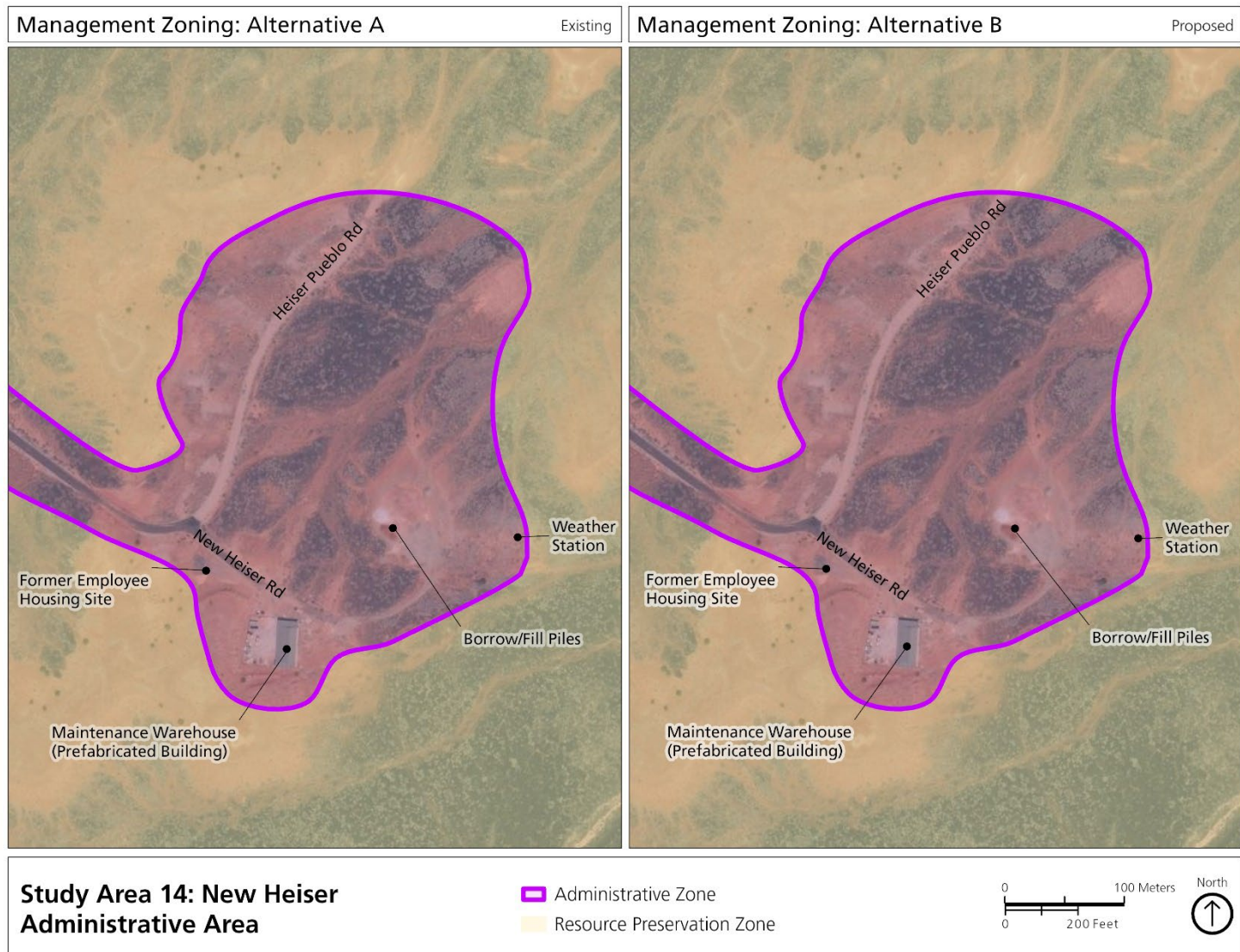


Figure G-6. Study Area 14: New Heiser Administrative Area – Management Zoning

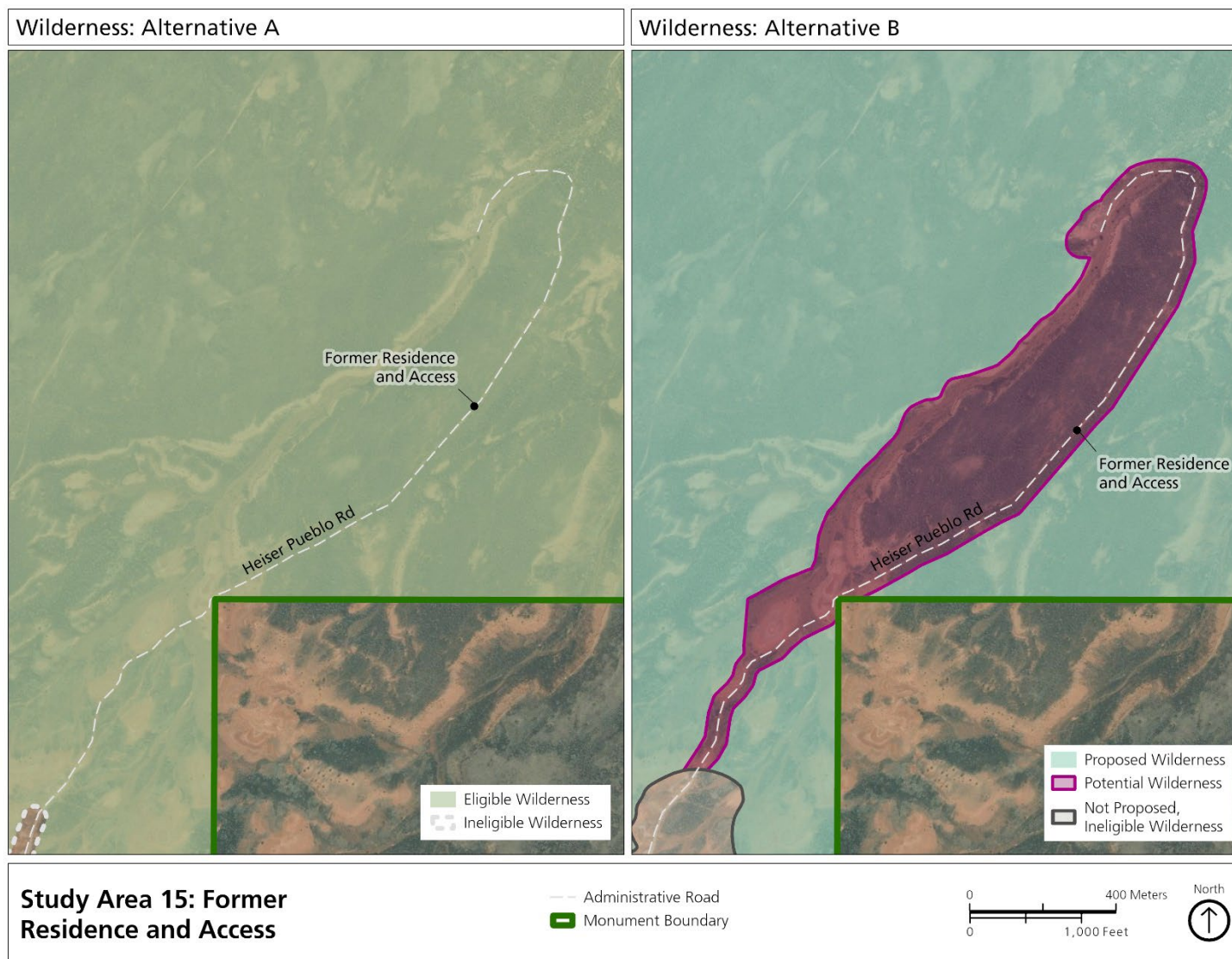


Figure G-7. Study Area 15: Former Residence and Access – Wilderness

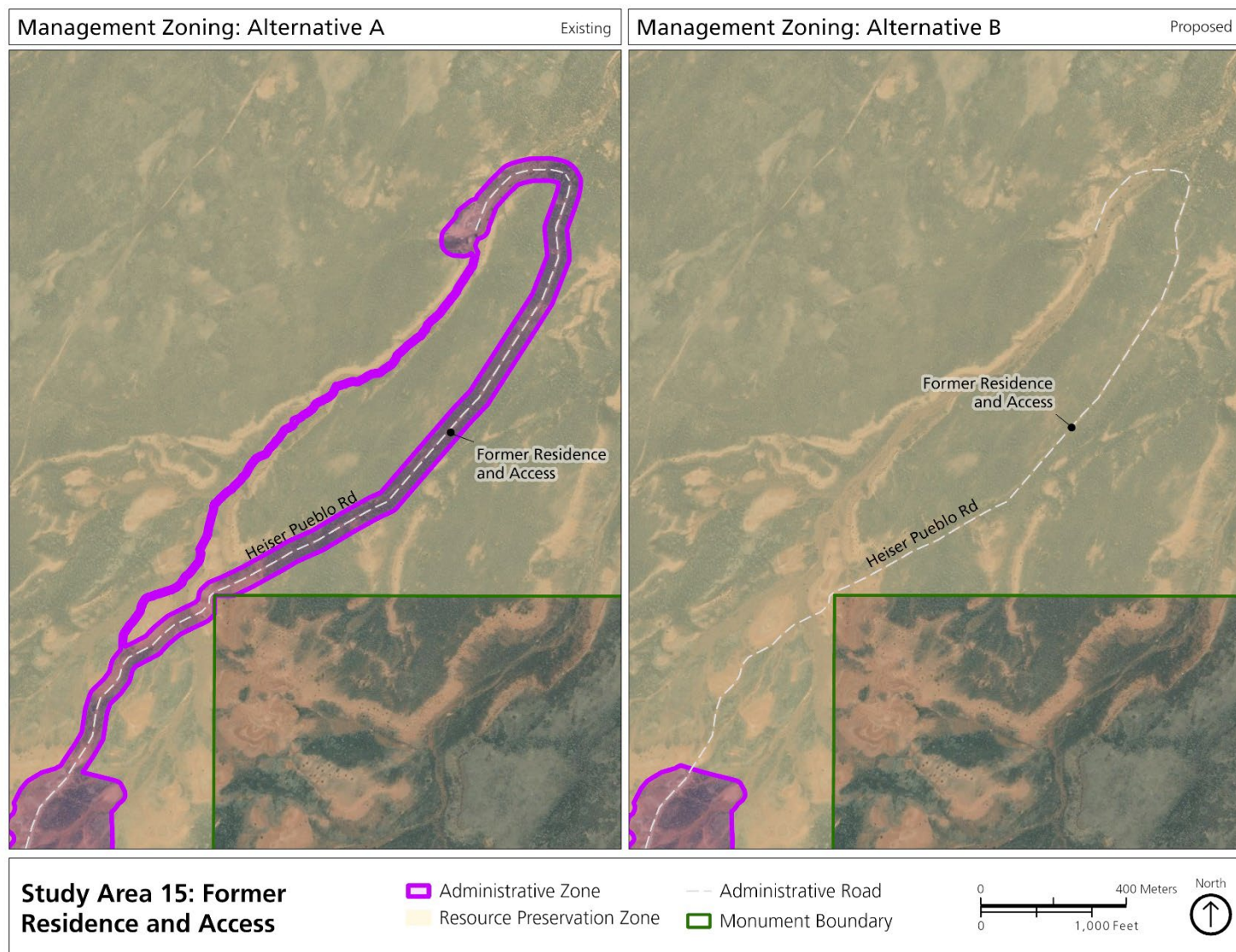


Figure G-8. Study Area 15: Former Residence and Access – Management Zoning

APPENDIX H: RELATIONSHIP TO OTHER WUPATKI NATIONAL MONUMENT PLANNING DOCUMENTS

This wilderness study is part of Wupatki National Monument's planning portfolio. A park planning portfolio is a collection of planning documents that guides decision-making and satisfies law and policy. The Wupatki National Monument planning portfolio creates a logical, trackable guide for park management actions.

Documents within Wupatki National Monument's planning portfolio directly related to this wilderness study follow.

1971 Preliminary Wilderness Study and Determination/Wilderness Recommendation. In October 1971, an early wilderness study and determination was completed for Wupatki National Monument (described in the 1971 document as a "preliminary wilderness study" and a "wilderness recommendation," but analogous to a wilderness eligibility assessment per current NPS policies). This early study determined all lands within the monument to be unsuitable for inclusion in the National Wilderness Preservation System "due to the existence of livestock grazing throughout the monument" (NPS 1971). (This determination did not reflect section 4[d][4][2] of the Wilderness Act, which states, "The grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture.")

The 1971 study also described the monument as "essentially an area of prehistoric ruins and relics, with basically different purposes, uses and management concepts from those of wilderness" (NPS 1971). An associated letter from then-Secretary of the Interior Roger C. B. Morton to the president noted "a continuing need for archeological research and excavations at the hundreds of archeological sites found in the monument" and stated that "such activity will involve the use of mechanical equipment within the roadless areas" (NPS 1971).

In the years since the 1971 study, several factors led to a reexamination of the preliminary wilderness study, including the removal of livestock grazing in 1989 and the acquisition of new lands in 1996. Additionally, developments, such as scientific research, subsequent protection laws and legal decisions pertaining to cultural resources, and the development of NPS wilderness management tools and guidance, prompted a need for guidance to ensure that cultural resources are appropriately considered in wilderness management. The National Park Service now recognizes that cultural resources may contribute to wilderness character. Based on an updated understanding of wilderness, NPS managers began reexamining wilderness eligibility for lands within the monument in about 2009.

2004 General Management Plan. The monument's general management plan—finalized with an approved record of decision in 2004—provides general management guidance for the monument but does not include consideration of wilderness. Under the general management plan, access to the undeveloped backcountry areas is limited to individuals with research permits, Tribal Nations, or visitors taking part in NPS-guided activities. The National Park Service periodically offers ranger-led hikes to destinations in the undeveloped backcountry, allowing visitors to explore and experience the rich cultural and biological landscape found in

the monument. Over time, monument staff and the public expressed growing interest in reevaluating the general management plan and determining if portions of the backcountry could be opened for unguided visitor experiences without harming the resources the monument was established to protect. Additionally, the National Park Service revisited and amended certain elements of the monument's general management plan to support enhanced visitor access and use and resource protection. These were major considerations in the development of the 2022 *Backcountry Management Plan/GMP Amendment/Environmental Assessment*, which is summarized below.

2013 Wilderness Eligibility Assessment and 2022 Wilderness Determination. A wilderness eligibility assessment is a general evaluation of lands that possess wilderness characteristics for possible inclusion in the National Wilderness Preservation System. In 2012, Flagstaff Area National Monuments personnel completed a wilderness eligibility assessment for Wupatki National Monument that determined approximately 34,194 acres (96.5% of the monument's total acreage) are eligible for wilderness designation, and that approximately 1,230 acres (3.5% of Wupatki National Monument's total acreage) are ineligible. On March 29, 2013, then-NPS Director Jonathan Jarvis concurred with these findings. The final eligibility determination was approved by NPS Director Charles Sams III, which was published in the *Federal Register* (87 FR 44421) on July 26, 2022, completing the eligibility assessment process. During civic engagement for this wilderness study, the National Park Service shared the eligibility determination with the public and requested review and comment, in accordance with *Reference Manual 41*, section 5.2.

2015 Foundation Document. In 2015, the monument's foundation document was approved. This foundation document outlines the monument's purpose, significance, and fundamental resources and values, which form the basis of future planning.

Wilderness qualities are identified as a **fundamental resource and value**:

Natural Setting / Wilderness. The largely undeveloped terrain conveys wilderness values through a sense of solitude, dark night skies, and natural quiet. Sandstone outcrops, grasslands, mesas, buttes, and volcanic hills appear against the backdrop of the Painted Desert and the San Francisco Peaks. This landscape also provides habitat for local wildlife, such as pronghorn, golden eagle, prairie falcon, and Wupatki pocket mouse.

The other fundamental resource and value identified in the foundation document is archeological resources, which also contribute to Wupatki National Monument's wilderness character (see the 2017 wilderness character assessment and baseline monitoring assessment below), as follows:

Archeological Resources. Wupatki National Monument contains a dense concentration of ancient and historic archeological sites, including pueblos, a ball court, amphitheater, agricultural features, petroglyphs, and associated artifacts, in an exceptional state of preservation that allows ongoing research and interpretation.

Furthermore, the monument's **significance** references wilderness:

***Scenery and Setting.** The clean air and environment of Wupatki National Monument provides exceedingly rare opportunities to experience uninterrupted vistas, stunning night skies, and natural sounds in a wilderness environment.*

In addition, the foundation document identifies completing a wilderness study as a high-priority planning need for the monument.

2017 Wupatki Eligible Wilderness: Wilderness Character Narrative and Baseline Monitoring Assessment. In August 2017, monument personnel, through the NPS Wilderness Fellows program, completed *Building Blocks for Wilderness Stewardship* for the Wupatki National Monument eligible wilderness. This document includes two main components: a qualitative wilderness character narrative and a quantitative baseline monitoring assessment for wilderness character. The narrative describes the unique and often-intangible values of the Wupatki eligible wilderness, with the goal of cultivating a greater understanding of the monument's key features of wilderness character. The monitoring assessment, which includes specific data-based measures of wilderness character, offers a framework for understanding change to wilderness character over time and using that knowledge to inform management. The document describes Wupatki's eligible wilderness in the context of each of the qualities of wilderness character identified in the Wilderness Act of 1964, including identifying the monument's archeological sites as "Other Features of Value."

2022 Backcountry Management Plan and Environmental Assessment. In December 2021, the National Park Service released the *Wupatki National Monument Backcountry Management Plan/GMP Amendment/Environmental Assessment*. Following public review and comment on the plan and environmental assessment, a finding of no significant impact was approved in April 2022, which was posted to PEPC on May 9, 2022, bringing the backcountry management planning process to a close. The purpose of the backcountry management plan is to provide for the protection and preservation of irreplaceable resources and wilderness character while establishing long-term direction for public access and experience of eligible wilderness and other backcountry lands and monument operations in those areas.

The backcountry management plan updated management zoning descriptions, boundaries, and desired conditions to address the preservation of wilderness character and to provide additional guided and unguided visitor opportunities in backcountry portions of the monument, including eligible wilderness. During plan development, these minor modifications to boundaries were approved by the Flagstaff Area National Monuments' superintendent and documented as a NEPA categorical exclusion under *CE Citation B.1: Changes or amendments to an approved plan when such changes would cause no or only minimal environmental impacts*. The plan also identifies indicators and thresholds to monitor changes in resource conditions and visitor experiences, and it includes visitor capacity identification for all backcountry areas of the monument, in fulfillment of legal requirements (1978 National Parks and Recreation Act). Preservation of wilderness character was a foremost consideration throughout the backcountry management planning process, and changes to management zoning were carefully coordinated with the findings of the 2013 wilderness eligibility assessment and more recent analysis.

However, this wilderness study proposes additional adjustments to management zone boundaries in some areas.

APPENDIX I: ISSUES AND IMPACT TOPICS CONSIDERED BUT DISMISSED FROM DETAILED ANALYSIS

Consistent with policy and regulations,¹³ the National Park Service used civic engagement and interdisciplinary team discussions to identify important issues to be analyzed in detail in this environmental assessment and to identify those issues that could be eliminated from further study. This appendix documents those issues and the related impact topics that were considered but then dismissed from further analysis and the reasons why.

WILDERNESS CHARACTER: UNTRAMMELED QUALITY

This quality is defined as wilderness ecological systems that are essentially unhindered and free from the intentional actions of human control or manipulation (Landres et al. 2015). Preserving the untrammeled quality requires restraint in management, rather than restraining the wilderness. Managing for this quality requires deliberate management planning for long-term outcomes, as well as approaching management with moderation and humility. Decisions should consider when and where interventions are well-placed and necessary and when and where opportunities exist to allow natural processes to occur without human intervention. Conversely, actions that intentionally manipulate or control ecological systems inside wilderness degrade this quality, regardless of what instigated the action or if benefits to other qualities of wilderness character are gained by the action (Jordahl 2017).

The monument's physical landscape, containing dunes, arroyos, and other geologic features, is defined by persistent erosional activities (wind, water) that shaped the landscape over millions of years. The soils formed from erosional forces, combined with the semiarid climate, support perennial bunchgrasses, scattered juniper, desert-adapted shrubs, cacti, wildflowers, and cottonwood trees, willows, and rushes in areas where streams run. The long archeological record visible on the landscape demonstrates that ancient peoples altered the landscape and its natural processes in a number of ways (Jordahl 2017).

Around the beginning of the 19th century, lands now included in the monument were intensely grazed and managed, which caused widespread environmental disturbances that broke up fragile cryptobiotic soil crusts¹⁴ and exacerbated erosion rates. This process resulted in vegetation loss, created conditions for nonnative plant establishment and persistence, changed natural fire patterns, and disturbed cultural resources (Baril et al 2018; Jordahl 2017). Grazing practices in the monument ceased in 1989, though management actions that degrade the untrammeled quality of wilderness are ongoing for the foreseeable future. These practices

13. NPS *Management Policies 2006*, section 1.7; NPS Director's Order 75a: *Civic Engagement and Public Involvement*; and guidance in section 4.2.E of the 2015 NPS NEPA Handbook.

14. Cryptobiotic crusts are communities of lichens, mosses, photosynthetic bacteria, blue-green algae, and microfungi that blend in with soils. These communities are known for their ecological roles in trapping sediments, stabilizing soils, and resisting erosion, as well as regulating soil fertility (nitrogen fixation) and water retention. Cryptobiotic crusts are an important primary stage in plant succession that enable native plants to establish and persist (Bowker et al. 2018; Belnap 2001).

include monitoring and management treatments for native plant restoration (seeding, mulching, outplanting, herbicide use, and other activities), fire suppression, and scientific data collection.

The monument's soils and vegetation are in a long stage of recovery, though conditions have improved since vegetation restoration activities were first implemented. Nonnative plant treatments are expected to continue, though the size of the treatment area has not significantly changed over time, and the intensity and frequency of soils manipulations are reduced. To date, about 66 acres of eligible wilderness (of the total 34,194 acres of eligible wilderness) have had invasive plant management treatment, and 250 acres of treatment are expected in the foreseeable future.

After decades of fire suppression, the monument's grasslands ecosystem is reported as improving in its ability to support natural fire regimes and is within a natural range of variability (NPS 2015; Baril et al. 2018). Fire suppression activities are explicitly allowed by the Wilderness Act, though the action of fire suppression is a substantial manipulation of a natural biophysical process (Jordahl 2017). The monument's fire management plan (NPS 2009a) calls for full suppression of wildland fires, including natural-ignited fires, while applying the appropriate level of fire management activities to protect sensitive resources. Fire suppression in the monument occurs where fire might escape into nonwilderness areas; where human safety, infrastructure, and liability concerns exist; and to minimize impacts on important cultural sites (Baril et al. 2018; Jordahl 2017; NPS 2009a).

Trammeling actions related to scientific studies on arthropod species (insects, spiders, centipedes, millipedes, others) involve activity to enable the identification, vouchering, and genetic analysis of arthropod species. However, these collections are limited, and there is likely little-to-no impact on species distribution or abundance; therefore, these activities do not meaningfully influence the untrammelled quality of wilderness.

Under all action alternatives analyzed in this environmental assessment, the conditions for untrammelled quality would continue as they are under current management (alternative A) because the conditions for the untrammelled quality of wilderness character would continue to be the same as or similar to existing conditions, with the same trends and impacts from past, present, and foreseeable planned actions. While conditions in the untrammelled wilderness environment are generally good, they are slightly declining, as actions described above would be expected to degrade the untrammelled quality of these areas for the foreseeable future.

Under alternatives B, C, and D, management zone boundaries would be revised to provide resource management protections to areas that would be included in proposed and proposed potential wilderness areas. These adjustments would facilitate ecological recovery of these areas and support actions that would remove existing infrastructure and return those areas to a more natural state, as well as provide guidelines for wildland fire management planning. This recovery would improve the untrammelled character of these lands over the long term by reducing the need for the intentional manipulation of the biophysical environment.

Under all alternatives, monument staff would continue working towards mitigating negative impacts when undertaking trammeling actions. Monument staff are currently working with the US Geological Survey to develop a restoration plan to guide activities at the confluence of Deadman Wash and the Little Colorado River (approximately 35 acres). An update to the 2009

fire management plan is underway that would incorporate current information and knowledge and may adjust how wildland fire is managed in the monument. The revised fire management plan would include a current analysis of climate trends that affect fire behavior and, thus, management strategies in the monument (NPS 2023) and incorporate other current knowledge to inform current fire management planning.

Note that trammeling actions are limited in area and scope (about 70 acres of eligible wilderness) when compared to the area of eligible wilderness within the monument. As ecological conditions improve, it would be reasonable to expect that fewer trammeling actions would be implemented over time, and the untrammeled quality would improve for NPS eligible wilderness over the long term. While numerous historic and prehistoric attempts have been made to manipulate natural processes in lands now considered wilderness, naturally functioning systems are still largely intact (Jordahl 2017). The actions identified in the alternatives of this wilderness study would contribute to, but not substantially change, the impacts that are already occurring on the untrammeled quality of wilderness. Differences across alternatives would be negligible, so this topic was dismissed from further analysis.

WILDERNESS CHARACTER: OPPORTUNITIES FOR SOLITUDE OR PRIMITIVE AND UNCONFINED RECREATION

This quality of wilderness character has three parts: solitude, primitive recreation, and unconfined type of recreation. “Solitude” includes concepts of separation from other visitors, remoteness from the sights and sounds of modern civilization, and a sense of timeless inspiration when experiencing wilderness in a comprehensive way. “Primitive recreation” encompasses reliance on personal skills to experience wilderness, such as traveling by nonmotorized and/or mechanized means, and no reliance on facilities or outside help. “Unconfined type of recreation” encompasses attributes such as self-direction and the physical and mental challenges and personal growth associated with experiencing elements such as weather, wind patterns, and other aspects of the natural world with minimal assistance from the devices of modern civilization (Landres et al. 2015).

This quality is preserved or improved by management actions that reduce encounters with other people, minimize signs of modern civilization inside the wilderness, and provide outstanding opportunities for recreation in an environment that is relatively free from the encumbrances of modern society. In contrast, this quality is degraded by settings that reduce these opportunities, such as encounters with other wilderness visitors, agency-provided recreation facilities that reduce self-reliance, management restrictions on visitor behavior, and actions that increase encounters with other humans. Structures, installations, and development intended for recreational use, such as wayfinding signs or trails, contribute to the degradation of all parts of this quality.

Many of the eligible wilderness lands within Wupatki National Monument evoke a sense of peace and quiet in the vast high desert wilderness and utter silence and total isolation from modern society. These areas provide a challenging venue for backcountry exploration and recreation, requiring situational awareness and encouraging a sense of adventure. Currently, visitor use occurs within two zones that overlap the Wupatki eligible wilderness—i.e., the extended learning zone and the discovery zone (approximately all of which is eligible

wilderness). Together, these two zones add up to approximately 4,078 acres (approximately 12% of the 34,194 acres in eligible wilderness). However, due to the need to protect the monument's highly sensitive cultural resources located throughout the wilderness, unguided access is currently not allowed. All visitor access is currently through NPS-guided group hikes, where visitors must stay with a guide and group while within the wilderness. As visitors are with a group for the duration of their hike, opportunities to experience being alone or remote from the sights and sounds of other people are very limited, though they are still afforded with the sense of being in an unfrequented or secluded place, allowing for some sense of solitude. Opportunities for unconfined recreation are currently not offered within the wilderness, as visitors must stay with the group and guide. Requirements for self-reliance are minimal, as hikers can depend on help and support from their trained guides or other group members if needed. Solitude is also degraded by the occasional motorized use of the 4.3-mile Crack-In-Rock Road that results in the sights and sounds of motorized use.

Under all action alternatives, opportunities for solitude or primitive and unconfined recreation would continue as they are under current management (alternative A) because the vast majority of wilderness areas would continue to be closed to public access; all visitor access would continue to be through NPS-guided group hikes, where visitors must stay with a guide and group while within the wilderness. Wupatki National Monument staff analyzed the potential for unguided use in two areas in the 2022 backcountry management plan, but the changes have yet to be implemented. Even if the National Park Service eventually allows some unguided access under the backcountry management plan, none of the alternatives considered in this environmental assessment would change public access to the Wupatki wilderness or opportunities to experience this quality. Under alternatives B and C, limiting very occasional motorized use of Crack-In-Rock Road to the first 1.65 miles and allowing for the natural recovery (passive restoration) of the remainder of the road would slightly improve this quality over time, as it would reduce the sights and sounds of motorized use. Under alternative C, the continued, very occasional use of the entire 4.3 miles of this road would represent no change from current conditions and, therefore, would not impact this quality of wilderness character. Regardless of the alternative, monument staff would also take simple actions to mitigate any negative impacts. As the alternatives in this environmental assessment would minimally affect this quality of wilderness and any differences across alternatives would be negligible, this topic was dismissed from further analysis.

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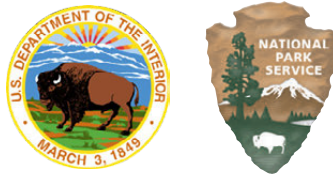
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As the nation’s principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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Wupatki National Monument | Draft Wilderness Study / Environmental Assessment | October 2024

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