

Chapter 5. Environmental Consequences

Introduction

This chapter provides a description of both beneficial and adverse impacts to the resources described in chapter 4 that would result from implementing any of the alternatives considered in this CLR/EA. This chapter also includes methods used to analyze direct, indirect, and cumulative impacts. Impacts are evaluated based on context, duration, intensity, and whether they are direct, indirect, or cumulative. It is organized by impact topics that were derived from internal park and external public scoping. A summary of the environmental consequences for each alternative is provided in Table 3, which can be found in *Chapter 4: Treatment*.

This CLR/EA assesses whether significant impacts would occur as a result of the proposed action or reasonable alternatives, resulting in an environmental impact statement (EIS), or whether a finding of no significant impact (FONSI) is the appropriate decision document.

General Methods

This section contains the environmental impacts, including direct and indirect effects, and their significance for each alternative. The analysis is based on the assumption that the mitigation measures identified in the “Mitigation” section of this CLR/EA would be implemented for the action alternatives. Overall, the NPS based these impact analyses and conclusions on the review of existing literature and park studies; information provided by experts within the park and other agencies; professional judgment and park staff insights; and public input.

In accordance with the CEQ regulations, direct, indirect, and cumulative impacts are described (40 CFR 1502.16), and the impacts

are assessed in terms of context and intensity (40 CFR 1508.27). Where appropriate, mitigating measures for adverse impacts are also described and incorporated into the evaluation of impacts. The specific methods used to assess impacts for each resource may vary; therefore, these methods are described under each impact topic.

The following terms are used in the discussion of environmental consequences to assess the impact intensity threshold and the nature of impacts associated with each alternative.

Context: Context is the setting within which an impact would occur, such as local (landscape character area); parkwide (Pea Ridge NMP); or regional (Benton County, Arkansas).

Duration: Duration of impact is analyzed independently for each resource because impact duration is dependent on the resource being analyzed. Depending on the resource, impacts may last for the construction period, a single year or growing season, or longer. For purposes of this analysis, impact duration is described as short-term or long-term. Impact duration is defined in a table for each resource topic.

Type: Effects can be beneficial or adverse. Beneficial effects are positive changes in the condition or appearance of the resource or a change that moves the resource toward a desired condition. Adverse effects are negative changes in the condition or appearance of the resource or a change that moves the resource away from a desired condition.

Direct and Indirect Impacts: Effects can be direct, indirect, or cumulative. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later or farther away, but are still reasonably

foreseeable. Direct and indirect impacts are considered in this analysis, but are not specified in the narratives. Cumulative effects are discussed in the next section.

Threshold for Impact Analysis: The duration and intensity of effects vary by resource. Therefore, the definitions for each impact topic are described separately. These definitions were formulated through the review of existing laws, policies, and guidelines; and with assistance from park staff and regional NPS staff. Impact intensity thresholds for negligible, minor, moderate, and major adverse effects are defined in a table for each resource topic.

Impact Intensity: This refers to the severity of impact. Impact intensity is defined individually for each impact topic. There may be no impact, or impacts may be negligible, minor, moderate, or major. The following should be considered in evaluating intensity:

1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
2. The degree to which the proposed action affects public health or safety.
3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.
5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of significant scientific, cultural, or historical resources.
9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Resource-specific context is presented in the Methodologies section under each resource topic and applies across all alternatives. Intensity of the impacts is presented using the relevant factors from the list above and is described as negligible, minor, moderate, or major. Intensity factors that do not apply to a given resource topic and/or alternative are not discussed.

Cumulative Effects

Cumulative impacts are defined as “the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time. The CEQ regulations that implement NEPA require assessment of cumulative impacts in the decision-making process for federal projects.

Methods for Assessing Cumulative Effects

Cumulative impacts were determined by combining the impacts of each action alternative and the no action alternative with other past, present, and reasonably foreseeable future actions. Past actions include activities that influenced and affected the current conditions of the environment near the project area. Ongoing or reasonably foreseeable future projects near the park or the surrounding region might contribute to cumulative impacts. The geographic scope of the analysis includes actions in the landscape character areas as well as other actions in the park or surrounding lands, where overlapping resource impacts are possible. The temporal scope includes actions within a range of approximately 10 years.

Once identified, past, present, and reasonably foreseeable actions were then assessed in conjunction with the impacts of the alternatives to determine if they would have any added adverse or beneficial effects on a particular resource, park operation, or visitor use. The impacts of past, present, and reasonably foreseeable actions vary for each resource. Cumulative effects are considered for each alternative and are presented in the environmental consequences discussion for each impact topic.

Past, Present, and Reasonably Foreseeable Actions

The following past, present, and reasonably foreseeable actions are relevant to the analysis of the effects on resources and values that would result from the alternatives, and are based on actions described in the GMP/EIS. No other reasonably foreseeable actions were identified in the vicinity of the project area that would potentially contribute to cumulative effects.

Vegetation and Wildlife Management

Past, present, and reasonably foreseeable actions regarding management of vegetation by the NPS includes various management techniques such as planting seedlings, restoring the orchards and prairie, mowing and haying operations, and exotic species management. Nonnative plant species have spread throughout the park and the spread of nonnative species would likely continue in the future. The NPS has managed, and continues to manage through its EPMP, vegetation to control invasive and noxious plant species in the park. The NPS has also instituted a WUI plan to reduce hazardous fuels and trees and has implemented prescribed burning under its Fire Management Plan (FMP). These management activities will continue in the future. The park has installed 15 miles of split-rail fence (with an additional 1.5 miles planned), reopened and incorporated historic roads into its trail system, and reopened a segment of the Trail of Tears.

U.S. Highway 62 Improvements

As discussed in Chapter 1: Purpose and Need, Arkansas State Highway and Transportation Department is proposing to widen Highway 62 from two lanes to four lanes from Avoca to Gateway. A portion of Highway 62 runs along the southern boundary of the park and would be rerouted outside (south) of the park boundary as part of this project. The existing

Highway 62 would be reduced to a two-lane road within the park boundary and would be used for park access. The reduction in lanes would involve heavy equipment to remove the asphalt, regrade the soils, and revegetate the areas that were previously asphalt.

Residential Development

Increased residential development around the park has been occurring and is likely to continue into the future, which may affect park resources.

Cultural Resources Methodology

The following effects analysis for cultural resources is based on three general site types found within the park – archeological sites (both historic and prehistoric); the built environment (buildings, structures, roads, and monuments); and the cultural landscape (a geographic area associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values). The following discussion of effects is generalized based on the type of ground disturbance associated with the treatment recommendations and the type of cultural resource. The effects on cultural resources are only considered for historic properties or those cultural resources listed or eligible for listing on the National Register. Short-term impacts on cultural resources were considered to be those impacts that would last only during the implementation period, while long-term impacts would be impacts that last beyond the implementation period.

The resource-specific context for assessing impacts of the alternatives on cultural resources includes:

- Preservation and protection of historic structures associated with the Battle of Pea Ridge are key to the park's mission and enabling legislation.
- The ability of the landscape elements to fully represent the 1862 Battle of Pea Ridge.
- Protection of archeological resources that have been found in the area related to the 1862 Battle of Pea Ridge.
- Protection of archeological resources at the park and in the surrounding area that signify a national event (the Civil War).
- Protection of prehistoric archeological resources that have been found in the park.

The thresholds of change for the intensity of an impact on cultural resources are defined in Table 5-1.

TABLE 5-1. CULTURAL RESOURCES IMPACT AND INTENSITY

| Impact Intensity | Intensity Description |
|-------------------|---|
| Negligible | Impacts would be at the lowest level of detection with neither adverse nor beneficial consequences. |
| Minor | Alteration of a pattern(s) or feature(s) of historic properties would not diminish the overall integrity of the resource. |
| Moderate | Alteration of a pattern(s) or feature(s) of the historic properties would diminish the overall integrity of the resource. |
| Major | Alteration of a feature(s) of historic properties would diminish the overall integrity of the resource. |

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the

Alternative. Under the no action alternative, the park would continue current levels of vegetation and cultural resource management. The current condition of the vegetation does not accurately represent the battlefield landscape and alters and partially obscure views in some areas of the battlefield. The historic and visual character of the cultural landscape would continue to not be fully conveyed. Vegetation encroachment and weathering would continue to deteriorate some cultural landscape features such as Leetown Hamlet. As a result, the no action alternative would have parkwide long-term moderate adverse effects on cultural resources.

Cumulative Impacts. Reasonably foreseeable future actions include implementing the vegetation management plan, which includes techniques such as tree and vegetation thinning, mowing, haying, planting, and seeding; implementing the EPMP to control invasive and noxious plant species; and implementing the FMP through prescribed burning to reduce hazardous fuels and trees. These actions have the potential to affect known and unknown historic properties from the construction of fire containment lines, mechanical impacts on surface artifacts, and soil erosion measures. The relocation of Highway 62 would likely indirectly improve the cultural landscape by moving the highway away from the park, thereby decreasing visual disturbances. Present and future residential and commercial development surrounding the park would directly adversely affect the cultural landscape by diminishing the landscape setting and backdrop of the battle. When combined with past, present, and reasonably foreseeable future actions, the no action alternative would have the potential for parkwide moderate adverse cumulative effects on historic properties.

Conclusions. The deterioration of some cultural landscape features under the no action alternative would result in parkwide, moderate, long-term, adverse effects on cultural resources. The cumulative effects would be parkwide moderate and adverse.

Alternative 1: Investigating and Preserving the Battle Landscape

Direct and Indirect Impacts of the

Alternative. Under Alternative 1, limited vegetation management would restore some aspects of the cultural landscape by reestablishing views; clearing trees and dense vegetation from landscape character areas; and providing indications of the location of non-extant structures. Some extant contributing features would be preserved and repaired. Archeological investigation would add to the knowledge and understanding of cultural resources in the park. These activities would improve cultural resources in the park and would have local moderate long-term beneficial effects.

Cumulative Impacts. As described under the no action alternative, overall, past, present, and reasonably foreseeable actions would result in local moderate adverse effects. With the beneficial contribution from Alternative 1, cumulative effects on cultural resources and would be local, moderate, and beneficial.

Conclusions. Alternative 1 would have parkwide moderate long-term beneficial effects on cultural resources by restoring some aspects of the cultural landscape and stabilizing and preserving some cultural landscape features. Alternative 1 would have local moderate beneficial cumulative effects on cultural resources.

Alternative 2: Preferred Alternative, Revealing the Battle's Context

Direct and Indirect Impacts of the Alternative. Alternative 2 includes most elements of Alternative 1, but would also focus on depicting the spatial qualities of the historic setting of 1862. Alternative 2 would rehabilitate historic circulation patterns, identify and mark sites and locations of non-extant features, and depict the mass, form, and scale of certain non-extant features. These activities would improve the cultural resources in the park and would have a local moderate long-term beneficial effect on the cultural resources.

Cumulative Impacts. As described under the no action alternative, overall, past, present, and reasonably foreseeable actions would result in local moderate adverse effects on cultural resources. With the beneficial contribution from Alternative 2, cumulative effects on cultural resources and would be local, moderate, and beneficial.

Conclusions. Alternative 2 would have a local moderate long-term beneficial effect on cultural resources by restoring some aspects of the cultural landscape and gathering archeological data from investigations. Alternative 2 would have local moderate beneficial cumulative effects on cultural resources.

Alternative 3: Reconstructing the Battle Scene

Direct and Indirect Impacts of the Alternative. Similar to Alternative 2, Alternative 3 would include vegetation management that would restore elements of the cultural landscape, but vegetation management under Alternative 3 would be more extensive. More trees and dense vegetation would be removed from landscape character areas and more views would be reestablished. Alternative 3 may include treatments such as reconstructing a non-extant building or recreating a

portion of the non-extant landscape. This alternative would require the most change to the existing cultural landscape; however the changes would have a local moderate long-term beneficial effect on cultural resources.

Cumulative Impacts. As described under the no action alternative, overall, past, present, and reasonably foreseeable actions would result in local moderate adverse effects on cultural resources. Alternative 3 would contribute local moderate long-term beneficial cumulative effects on cultural resources.

Conclusions. Alternative 3 would have a local moderate long-term beneficial effect on cultural resources by rehabilitating the Pea Ridge landscape to closely resemble what the fighting soldiers witnessed. Alternative 3 would have beneficial cumulative effects on cultural landscapes.

Vegetation

Methodology

For each alternative, the effects on vegetation in the landscape character areas were analyzed to determine the potential to change the ecological functions of existing vegetation communities. Potential effects on vegetation were evaluated based on the existing vegetation and the natural or human-based processes sustaining them within the landscape character areas. Potential effects associated with implementing the vegetation management plan are addressed under cumulative impacts. Short-term impacts on vegetation were considered to be those impacts that would last less than two years, while long-term impacts would be impacts lasting more than two years. Resource-specific context for assessing impacts of the alternatives on the proposed vegetation includes:

- The contribution of vegetation to the visitor experience within the park and the visitor's understanding of the 1862 Battle of Pea Ridge.
- Potential for establishing the proposed vegetation communities considering existing and future geographic, climatic, and other conditions.
- The potential short-term and long-term effects on the overall health of the ecosystems of the park and surrounding lands.

The thresholds of change for the intensity of an impact on vegetation are defined in Table 5-2.

TABLE 5-2. VEGETATION IMPACT AND INTENSITY

| Impact Intensity | Intensity Description |
|-------------------|--|
| Negligible | The impacts on vegetation (individuals or communities) would not be measurable. The abundance or distribution of individuals would not be affected or would be slightly affected. The effects would be on a small scale and no species of special concern would be affected. Ecological processes and biological productivity would not be affected. |
| Minor | The action would not necessarily decrease or increase the project area's overall biological productivity. The alternative would affect the abundance or distribution of individuals in a localized area, but would not affect the viability of local or regional populations or communities. Mitigation to offset adverse effects, including special measures to avoid affecting species of special concern, would be required and would be effective. Mitigation may be needed to offset adverse effects, would be simple to implement, and would likely be successful. |
| Moderate | The action would result in effects on some individual native plants and also would affect a sizeable segment of the species' population over a large area. Permanent impacts would occur to native vegetation, but in a relatively small area. Some special status species also would be affected. Mitigation measures would be necessary to offset adverse effects and would likely be successful. |
| Major | The action would have considerable effects on native plant populations, including special status species, and would affect a large area within and outside the park. Extensive mitigation measures to offset the adverse effects would be required; and the success of the mitigation measures could not be guaranteed. |

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the Alternative. Under the no action alternative, current management activities would continue to establish healthy landscapes that have a varying degree of similarity to the 1862 landscape, although the pace of these activities would depend on available funding. The impacts would vary depending on the existing landscape types, as well as the specific activities proposed. Land-disturbing activities associated with vegetation management may increase the likelihood for the introduction or spread of exotic species or noxious weeds. Because healthy landscapes would slowly be established, the no action alternative would have parkwide long-term minor beneficial effects on vegetation.

Cumulative Impacts. Past actions, including fire suppression and maintenance activities, have allowed for an increase in invasive and noxious species and have resulted in unhealthy forests within the park. Proposed and ongoing NPS maintenance and management activities would assist in reestablishing healthy systems where previous activities, such as cessation of fire as well as clearing of the landscape for crops, have allowed the invasion of eastern red cedars and other species. Reasonably foreseeable future actions include implementing several plans to improve the health of the vegetation in the park and to better convey the historic character of the battlefield during the period of significance. The vegetation management plan would implement techniques such as thinning, mowing, haying, and planting seedlings to improve vegetation community health and to better convey the historic character of the cultural landscape. Implementing the EPMP to control invasive and noxious plant species and implementing the FMP through prescribed burning to reduce hazardous fuels and trees would also improve the health of vegetation communities. Existing and future residential and commercial devel-

opment surrounding the park would increase the fragmentation of the existing native plant communities. Development would isolate the native vegetation and diminish the range and size of plant populations within the park. The potential for invasion of undesirable exotic vegetation would increase as development continues and when Highway 62 is rehabilitated for park use. Overall, when combined with past, present, and reasonably foreseeable future actions, the no action alternative would have a parkwide moderate beneficial cumulative effect on vegetation.

Conclusions. Because vegetation health in the park would slightly improve over time, the no action alternative would have parkwide long-term minor beneficial effects on vegetation. Cumulative effects would be parkwide, moderate, and beneficial.

Alternative 1: Investigating and Preserving the Battle Landscape

Direct and Indirect Impacts of the Alternative. Alternative 1 would have little effect on vegetation in the landscape character areas. The alternative is focused on archaeological investigations and historic research, with limited vegetation management. Current vegetation management in the Ford Area, Leetown Hamlet, and Elkhorn Tavern / Williams Hollow would continue, with some minor changes to better reveal the spatial relationships of roads and extant and non-extant buildings. In addition to similar management and minor modifications at Elkhorn Mountain and the Federal Trenches, additional vegetation management would include clearing and thinning trees and/or trimming shrubs in portions of the landscape character areas to open up historic views and lines of sight. Much of these areas include forest and brush that have encroached into historically cleared areas. The areas in which trees are removed would likely become forested unless managed otherwise. All vegeta-

tion management would be consistent with the park's goal to improve vegetation health and better depict the historic character of the battlefield during the period of significance. Because Alternative 1 would include minor modifications to current vegetation management activities and would be consistent with measures to improve vegetation health and better depict the historic character of the cultural landscape, its effects would be local, long-term, minor, and beneficial.

Cumulative Impacts. As described in the no action alternative, past, present, and reasonably foreseeable future projects would have a park wide moderate beneficial effect on vegetation. Those impacts, in combination with the local long-term minor beneficial effects of Alternative 1, would result in park wide moderate beneficial cumulative impacts.

Conclusions. Under Alternative 1, the minor modifications in existing vegetation management in the landscape character areas would result in local, long-term, minor, beneficial effects on vegetation. Cumulative effects would be parkwide, moderate, and beneficial.

Alternative 2: Preferred Alternative, Revealing the Battle's Context

Direct and Indirect Impacts of the Alternative. Alternative 2 would include effects similar to those described for Alternative 1, including modifications to current vegetation management practices. The extent of modification would be greater than under Alternative 1. More trees would be cleared at the Federal Trenches and on Elkhorn Mountain. The farmstead character of the Ford and Elkhorn Tavern/Williams Hollow areas would be expressed by managing vegetation to establish fields and, possibly, orchards. As with Alternative 1, the changes in vegetation management would be consistent with the overall goal of improving the health of the vegetation communities and better conveying the historic character of the park. For these reasons, Alternative

2 would have local, long-term, minor, beneficial effects on vegetation.

Cumulative Impacts. As described in the no action alternative, past, present, and reasonably foreseeable future projects would have a parkwide moderate beneficial effect on vegetation. Those effects, in combination with the local long-term minor beneficial effects of Alternative 2, would result in parkwide moderate beneficial cumulative impacts.

Conclusions. Alternative 2 would include modifications to vegetation in the landscape character areas that would have local minor long-term beneficial effects. Cumulative effects would be parkwide, moderate, and beneficial.

Alternative 3: Reconstructing the Battle Scene

Direct and Indirect Impacts of the Alternative. Alternative 3 would include vegetation management and effects similar to those described for Alternative 2, but would include rehabilitating historic roads by clearing and trimming vegetation. As with alternatives 1, and 2 the changes in vegetation management would be consistent with the overall goal of improving the health of the vegetation communities and better conveying the historic character of the park. For these reasons, Alternative 3 would have local, long-term, minor, beneficial effects on vegetation.

Cumulative Impacts. As described in the no action alternative, past, present, and reasonably foreseeable future projects would have a parkwide moderate beneficial effect on vegetation. Those effects, in combination with the local long-term minor beneficial effects of Alternative 3, would result in parkwide moderate beneficial cumulative impacts.

Conclusions. Alternative 3 would include modifications to vegetation in the landscape character areas that would have local minor long-term beneficial effects. Cumulative effects would be parkwide, moderate, and beneficial.

Wildlife

Methodology

Potential impacts on wildlife are evaluated based on the native species, their habitats, and the natural processes sustaining them within the park. The NPS Organic Act, which directs parks to conserve wildlife unimpaired for future generations, is interpreted to mean that native animal life should be protected and perpetuated as part of the park's natural ecosystem. Natural processes are relied on to control populations of native species to the greatest extent possible; otherwise, they are protected from harvest, harassment, or harm by human activities. According to NPS Management Policies 2006, the restoration of native species is a high priority (sec. 4.1). Management goals for wildlife include maintaining components and processes of naturally evolving park ecosystems, including natural abundance, diversity, and the ecological integrity of plants and animals. Short-term impacts on wildlife were considered to be those impacts that would last less than one year, while long-term impacts would be impacts lasting more than one year.

The resource-specific context for assessing impacts of the alternatives on wildlife includes:

- The contribution of wildlife to visitor experience within the park.
- The contribution of wildlife to understanding the Battle of Pea Ridge and the setting in 1862.
- The effects of changes in vegetation on wildlife, their habitats, and the natural processes sustaining them.

The thresholds of change for the intensity of impacts to wildlife are defined in Table 5-3.

TABLE 5-3. WILDLIFE IMPACT AND INTENSITY

| Impact Intensity | Intensity Description |
|-------------------|--|
| Negligible | There would be no observable or measurable impacts to native species, their habitats, or the natural processes sustaining them. Impacts would be well within natural fluctuations. |
| Minor | Impacts would be detectable and would not be expected to be outside the natural range of variability of native species' populations, their habitats, or the natural processes sustaining them. Mitigation measures, if needed to offset adverse effects, would be simple and successful. |
| Moderate | Breeding animals of concern are present; animals are present during particularly vulnerable life stages such as migration or juvenile stages; mortality or interference with activities necessary for survival would be expected on an occasional basis, but would not be expected to threaten the continued existence of the species in the park unit. Impacts on native species, their habitats, or the natural processes sustaining them would be detectable and would be outside the natural range of variability. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful. |
| Major | Impacts on native species, their habitats, or the natural processes sustaining them would be detectable and would be expected to be outside the natural range of variability. Key ecosystem processes might be disrupted. Loss of habitat might affect the viability of at least some native species. Extensive mitigation measures would be needed to offset any adverse effects and the success could not be guaranteed. |

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts. Under the no action alternative, current vegetation management practices in the landscape character areas and parkwide would continue, including thinning open woodlands, planting trees in areas that were historically forested but are currently open fields, mowing existing grassland areas, continuing to develop and implement the EPMP, and reestablishing the orchards at Elkhorn Tavern and Ford Farm. Tall grasses would be maintained around fences as habitat for game birds. In addition, the eastern red cedar populations would be greatly reduced. This would reduce the food source for birds and mammals in the park and reduce nesting and roosting cover for birds, including chipping sparrows, American robins, song sparrows, and other birds. Although these actions would modify wildlife habitat, the modifications would occur slowly over time and would not affect wildlife use of the habitat. Thinning open woodlands and planting trees in open fields would enhance habitat by reducing overgrown forests and expanding wooded habitat. Continued mowing would directly impact wildlife, specifically breeding birds, because it could cause a disturbance to birds or their nests. Although the prescribed burns could have a direct impact on wildlife within the areas to be burned, the burns would enhance and maintain wildlife habitat over the long term because fires can reduce the amount of exotic species and increase seed production. Deer and other wildlife populations would likely continue to increase in the park due to decreasing habitat in the areas surrounding the park. The continued vegetation management practices would have a beneficial impact on wildlife by maintaining and enhancing habitat within the park. Mowing nonnative grassland areas would have a local short-term minor adverse impact on wildlife habitat because it could affect breeding birds. Overall, the no action alternative

would result in both local long-term minor beneficial effects and local short-term minor adverse impacts on wildlife.

Cumulative Effects. Past and ongoing NPS management of vegetation has maintained and enhanced wildlife habitat within the park. Reasonably foreseeable future actions include implementing the selected alternative for the vegetation management plan, the EPMP, and the FMP. Implementing these plans would consist of activities that would maintain and enhance wildlife habitat, with the exception of mowing and haying, which could directly decrease migratory bird habitat and potentially harm breeding nests. The relocation of Highway 62 would likely improve wildlife habitat by moving the highway away from the park and reducing traffic along the road, which would decrease noise and visual disturbances. Present and future residential and commercial development surrounding the park would indirectly adversely affect wildlife by decreasing surrounding habitat and increasing demand on the ecosystems present in the park. Overall, when combined with past, present, and reasonably foreseeable future actions, the no action alternative would have both beneficial and adverse parkwide minor cumulative impacts on wildlife.

Conclusion. The effects from the no action alternative on wildlife and wildlife habitat would occur over a long period and would not likely cause a decrease in wildlife populations. The no action alternative would result in both beneficial and adverse parkwide long-term minor impacts on wildlife. Cumulative impacts on wildlife would be both beneficial and adverse, parkwide, and minor.

Alternative 1: Investigating and Preserving the Battle Landscape

Direct and Indirect Impacts. Under Alternative 1, the effects on wildlife and wildlife habitat of minor modifications to the current vegetation management approaches in the landscape character areas would be so minor as to be indiscernible from effects of the no action alternative. Overall, Alternative 1 would result in both local long-term minor beneficial effects and local short-term minor adverse impacts on wildlife.

Cumulative Impacts. As described under the no action alternative, past, present, and reasonably foreseeable future actions would have both beneficial and adverse parkwide minor cumulative impacts on wildlife. Those impacts, in combination with the local long-term minor beneficial effects and local short-term minor adverse impacts on wildlife of Alternative 1 would result in parkwide minor beneficial and adverse cumulative effects.

Conclusion. Because the effects on wildlife and wildlife habitat under Alternative 1 would be indistinguishable from those of the no action alternative, Alternative 1 would have both beneficial and adverse parkwide long-term minor impacts on wildlife. Cumulative impacts on wildlife would be both beneficial and adverse, parkwide, and minor.

Alternative 2: Preferred Alternative, Revealing the Battle's Context

Direct and Indirect Impacts. Under Alternative 2, the effects on wildlife and wildlife habitat of modifications to the current vegetation management approaches in the landscape character areas would be so minor as to be indiscernible from effects of the no action alternative and Alternative 1. Clearing and thinning trees at the Federal Trenches and on Elkhorn Mountain would reduce habitat for some species, but the availability of similar habitat throughout the park would result in

no discernible changes in wildlife use. Overall, Alternative 2 would result in both local long-term minor beneficial effects and local short-term minor adverse impacts on wildlife.

Cumulative Impacts. As described under the no action alternative, past, present, and reasonably foreseeable future actions would have both beneficial and adverse parkwide minor cumulative impacts on wildlife. Those impacts, in combination with the local long-term minor beneficial effects and local short-term minor adverse impacts on wildlife of Alternative 2 would result in parkwide minor beneficial and adverse cumulative effects.

Conclusion. Because the effects on wildlife and wildlife habitat under Alternative 2 would be indistinguishable from those of the no action alternative, Alternative 2 would have both beneficial and adverse parkwide long-term minor impacts on wildlife. Cumulative impacts on wildlife would be both beneficial and adverse, parkwide, and minor.

Alternative 3: Reconstructing the Battle Scene

Direct and Indirect Impacts. Under Alternative 3, the effects on wildlife and wildlife habitat of modifications to the current vegetation management approaches in the landscape character areas would be so minor as to be indiscernible from effects of the no action alternative and alternatives 1 and 2. Clearing and thinning trees at the Federal Trenches and on Elkhorn Mountain and rehabilitating roads and farmstead fields would reduce habitat for some species, but the availability of similar habitat throughout the park would result in no discernible changes in wildlife use. Overall, Alternative 3 would result in both local long-term minor beneficial effects and local short-term minor adverse impacts on wildlife.

Cumulative Impacts. As described under the no action alternative, past, present, and reasonably foreseeable future actions would have

both beneficial and adverse parkwide minor cumulative impacts on wildlife. Those impacts, in combination with the local long-term minor beneficial effects and local short-term minor adverse impacts on wildlife of Alternative 3 would result in parkwide minor beneficial and adverse cumulative effects.

Conclusion. Because the effects on wildlife and wildlife habitat under Alternative 3 would be indistinguishable from those of the no action alternative, Alternative 3 would have both beneficial and adverse parkwide long-term minor impacts on wildlife. Cumulative impacts on wildlife would be both beneficial and adverse, parkwide, and minor.

Visitor Experience

Methodology

Potential impacts on visitor experience are assessed based on the affected environment for visitor experience presented in this document. Enjoyment of park resources and values by visitors is part of the fundamental purpose of all parks. Past interpretive and administrative planning documents provided background on changes to visitor experience over time. For this analysis, visitor experience includes visitor understanding, satisfaction, and safety, as well as availability of visitor options. Short-term impacts on the visitor experience were considered to be those impacts that would last only during project implementation activities, while long-term impacts would be impacts extending beyond project implementation activities. Resource-specific context for assessing impacts of the alternatives on visitor experience includes:

- Expectations of visitors to experience an accurate Civil War battle site.
- Visitor understanding of the Battle of Pea Ridge and how the cultural landscape may have influenced the battle.
- The contribution of the cultural landscape to visitor experience of the park.
- The ability of visitors to enjoy a safe experience in the park.
- The effects of treatment activities on visitor experience.

The thresholds of change for the intensity of an impact to visitor experience and recreation resources are described in Table 5-4.

TABLE 5-4. VISITOR EXPERIENCE IMPACT AND INTENSITY

| Impact Intensity | Intensity Description |
|-------------------|---|
| Negligible | Changes in visitor experience would be below or at an imperceptible level of detection. The visitor would not likely be aware of the effects associated with the action. |
| Minor | Changes in visitor experience would be detectable, although the changes would be slight. Most visitors would be aware of the effects associated with the action, but would not likely express an opinion about the changes. |
| Moderate | Changes in visitor experience would be readily apparent. The visitor would be aware of the effects associated with the action and would likely express an opinion about the changes. |
| Major | Changes in visitor experience would be readily apparent and severely adverse or exceptionally beneficial. The visitor would be aware of the effects associated with the action and would likely express a strong opinion about the changes. |

Short-term impact—occurs only during project construction

Long-term impact—continues after project construction

Environmental Consequences

No Action Alternative

Under the no action alternative, the present level of use, management, interpretation, maintenance and operations of the cultural landscape would continue. The park would retain and enhance a large portion of the historic character of the battlefield landscape; however, the natural and man-made changes that have altered the landscapes and resources would not be substantially managed or changed. The natural and man-made modifications and alterations that have occurred within the battlefield landscape over time have altered it from its 1862 appearance. Many cultural landscape features would remain obscured by vegetation and unmarked. Vegetation encroachment and weathering would continue to deteriorate cultural landscape features.

By not substantially managing or changing the altered landscape and by not rehabilitating the cultural landscape by preserving known contributing features and by revealing the patterns and features that existed at the time of the battle, the interpretation value and visitor understanding of the battlefield landscape would continue to deteriorate. Because of this, the ability of the park to convey the historic character of the cultural landscape that existed at the time of the Battle of Pea Ridge would be diminished. The existing interpretation, exhibits, special events, and overall visitor experience would continue under the no action alternative. Because the natural and man-made changes in the park would not be substantially managed or changed, the no action alternative would have parkwide long-term minor adverse effects on the visitor experience.

Cumulative Impacts. Past and ongoing NPS management of vegetation and cultural landscape features has maintained, but not

greatly improved, the conditions of the cultural landscape. The current conditions affect visitor enjoyment because the conditions do not accurately represent the battlefield landscape and alter and partially obscure views and interpretation in some areas of the battlefield. Reasonably foreseeable future actions include implementing the vegetation management plan, which will better convey the historic character of the battlefield and improve the visitor understanding of the park. Implementing the EPMP to control invasive and noxious plant species and implementing the FMP to reduce hazardous fuels and trees would have minor contributions to the beneficial effects of the vegetation management plan. The relocation of U.S. Highway 62 would likely indirectly improve visitor experience by moving the highway away from the park, thereby decreasing noise and visual disturbances. Present and future residential and commercial development surrounding the park would indirectly adversely affect visitor experience by diminishing the landscape setting of the battle and by increasing demand on natural spaces in the park. When combined with past, present, and reasonably foreseeable future actions, the no action alternative would have parkwide moderate beneficial and negligible to minor adverse cumulative impacts on visitor experience.

Conclusions. The natural and man-made changes that have altered the park from its 1862 appearance would not be substantially managed or changed under the no action alternative. These current and continuing changes would lead to a reduced interpretation value and visitor understanding of the Battle of Pea Ridge. As a result, the no action alternative would have parkwide long-term minor adverse impacts on visitor experience because. The no action alternative would have parkwide moderate beneficial and minor adverse cumulative impacts on visitor experience.

Alternative 1: Investigating and Preserving the Battle Landscape

Direct and Indirect Impacts of the

Alternative. Alternative 1 focuses on addressing future research and investigation needed to accurately convey the historic setting, particularly in the landscape character areas. This would eventually improve the experience of visitors as new knowledge and understanding are incorporated into vegetation management, preservation of cultural landscape features, and interpretative programming. Alternative 1 would also include some preservation, stabilization, and repair of extant features, which would somewhat improve visitor understanding of the site. Large trees would be thinned at the East Overlook and at the Federal Trenches to open up historic views and lines of sight. Because of the many improvements, Alternative 1 would have a parkwide long-term minor beneficial effect on visitor experience.

Cumulative Impacts. Along with the parkwide long-term minor beneficial impact of Alternative 1 on visitor experience, cumulative effects of Alternative 1 would be parkwide, moderate, and beneficial and parkwide, minor, and adverse.

Conclusions. The additional knowledge and understanding of the cultural landscape of the park and select preservation, stabilization, and repair of extant features would have a parkwide long-term minor beneficial effect on visitor experience. Cumulative effects of Alternative 1 would be parkwide, moderate, and beneficial and parkwide minor and adverse.

Alternative 2: Preferred Alternative, Revealing the Battle's Context

Direct and Indirect Impacts of the

Alternative. As with Alternative 1, under Alternative 2, there would be additional research and investigations, but the alternative would

focus on depicting the spatial qualities of the historic setting during the period of significance. This focus would provide new and more accurate interpretive opportunities throughout the site. Because of the many improvements, Alternative 2 would have a parkwide moderate long-term beneficial effect on visitor experience.

Cumulative Impacts. Along with the parkwide long-term moderate beneficial impact of Alternative 2 on visitor experience, cumulative effects of Alternative 2 would be parkwide, moderate, and beneficial and parkwide, minor, and adverse.

Conclusions. More accurately depicting the historic character of the park during the period of significance under Alternative 2 would have parkwide long-term moderate beneficial effects on visitor experience. Cumulative effects of Alternative 2 would be parkwide, moderate, and beneficial and parkwide, minor, and adverse.

Alternative 3: Reconstructing the Battle Scene

Direct and Indirect Impacts of the Alternative

Alternative. Alternative 3 would rehabilitate the Pea Ridge Battlefield landscape to closely resemble what the fighting soldiers witnessed. The landscape that the troops encountered would be closely reflected in the reconstruction of features. This alternative provides the opportunity for the most immersive experience for visitors, recreates the most features, and offers to tell the story of the greater landscape. Visitors would have the opportunity to discover the realities that the fighting soldiers faced by revealing the physical obstacles that challenged them during the two-day battle. Under Alternative 3, effects on visitor experience would be parkwide, long-term, moderate, and beneficial.

Cumulative Impacts. Along with the parkwide long-term moderate beneficial impact of Alternative 3 on visitor experience, cumulative effects of Alternative 3 would be parkwide, moderate, and beneficial and parkwide, minor,

and adverse.

Conclusions. More accurately depicting the historic character of the park during the period of significance under Alternative 3 would have parkwide long-term moderate beneficial effects on visitor experience. Cumulative effects of Alternative 1 would be parkwide, moderate, and beneficial and parkwide, minor, and adverse.

Park Operations

Methodology

Park operations include the infrastructure, staff, and maintenance activities used in the operation of the park to adequately protect and preserve vital resources and provide for an effective and safe employee and visitor experience. This includes interpretation and education, protection, planning and resource management, business services, and facility management. Short-term impacts on park operations were considered to be those impacts that would last only during implementation activities, while long-term impacts would extend beyond implementation activities. Resource-specific context for assessing impacts of the alternatives on park operations includes:

- Parks must operate within the constraints of the unit-specific budget and number of staff positions that have been allocated by Congress and the NPS Director's Office.
- Park staff is not only responsible for activities within the park, but must also provide for an effective and safe experience and protect resources within the entire park.
- Cultural landscape treatments must not affect the ability of park staff to complete maintenance activities and ensure a safe environment.

The thresholds of change for the intensity of an impact to park operations are described in Table 5-5.

TABLE 5-5. PARK OPERATIONS IMPACT AND INTENSITY

| Impact Intensity | Intensity Description |
|-------------------|---|
| Negligible | The effects would be at low levels of detection and would not have appreciable effects on park operations. |
| Minor | The effects would be detectable, and would be of a magnitude that would not have appreciable effects on park operations. If mitigation is needed to offset adverse effects, it would be simple and likely successful. |
| Moderate | The effects would be readily apparent and would result in a change in park operations that would be noticeable to park staff and the public. Mitigation measures would be necessary to offset adverse effects and would likely be successful. |
| Major | The effects would be readily apparent, would result in a substantial change in park operations in a manner noticeable to staff and the public, and would be markedly different from existing operations. Mitigation measures to offset adverse effects would be necessary and extensive, and success could not be guaranteed. |

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the Alternative. Under the no action alternative, there would be no change in current site operations or infrastructure. The park would continue the present level of operations and maintenance of the cultural landscape in the park, as funding allows. The estimated number of labor hours required for continuing current management activities would remain the same under the no action alternative; therefore, the no action alternative would have no effect on the park budget.

Under the no action alternative, the natural and man-made changes that have altered the cultural landscape and its contributing features from its 1862 appearance would not be reduced and the cultural landscape would continue to deteriorate. This would affect the interpretive staff's ability to effectively convey how the cultural landscape influenced the Battle of Pea Ridge. The no action alternative would have a parkwide long-term minor adverse impact on park operations because the ability of the interpretive staff to demonstrate how vegetation influenced the Battle of Pea Ridge would be diminished.

Cumulative Impacts. Past actions and reasonably foreseeable future actions include implementing the vegetation management plan, the EPMP, and the FMP. These actions would have no new impacts on park operations, they would merely refocus existing resources on different goals and objectives. The relocation of U.S. Highway 62 would impact park operations by closing sections of the park during construction and increasing costs for maintenance. When combined with past, present, and reasonably foreseeable future actions, the no action alternative would have a parkwide minor adverse cumulative impact on park operations.

Conclusions. Current maintenance and operation activities would continue under the no action alternative. The continued cultural landscape management actions would result in the continued deterioration in cultural resources, interpretation, and education value of the park, which would result in a parkwide long-term minor adverse impact on park operations by preventing park staff from being able to adequately convey the Battle of Pea Ridge. Cumulative effects on park operations would be parkwide, minor, and adverse.

Alternative 1: Investigating and Preserving the Battle Landscape

Direct and Indirect Impacts of the Alternative. Alternative 1 focuses on addressing future research and investigation needed to accurately convey the historic setting, particularly in the landscape character areas. This would eventually improve the park interpretive staff's ability to effectively convey how the cultural landscape influenced the Battle of Pea Ridge. Alternative 1 would also include some preservation, stabilization, and repair of extant features, and large trees would be thinned at the East Overlook and at the Federal Trenches to open up historic views and lines of sight. These activities would require minor reallocations of budget and labor to implement, which would have a minor effect on park operations. Because of the improvements, Alternative 1 would have parkwide long-term minor beneficial effects and parkwide long-term minor adverse effects on park operations.

Cumulative Impacts. Along with the parkwide long-term minor beneficial and adverse impacts of Alternative 1 on park operations, cumulative effects of Alternative 1 would be parkwide, minor, and beneficial and parkwide, minor, and adverse.

Conclusions. The additional knowledge and understanding of the cultural landscape of the park and select preservation, stabilization, and repair of extant features would have parkwide long-term minor beneficial and adverse effects on park operations. Cumulative effects of Alternative 1 would be parkwide, minor, and beneficial and parkwide minor and adverse.

Alternative 2: Preferred Alternative, Revealing the Battle's Context

Direct and Indirect Impacts of the Alternative. As with Alternative 1, under Alternative 2, there would be additional research and investigations, but the alternative would focus on depicting the spatial qualities of the historic setting during the period of significance. This focus would provide new and more accurate interpretive opportunities throughout the site, which would improve the park interpretive staff's ability to effectively convey how the cultural landscape influenced the Battle of Pea Ridge. Alternative 2 would also include some preservation, stabilization, and repair of extant features, and large trees would be thinned at the East Overlook and at the Federal Trenches to open up historic views and lines of sight. Historic roads and trails would be preserved and repaired to fully convey the circulation network that existing at the time of the battle. Non-extant features would be marked or cleared and some non-extant features would be 'ghosted', which would require on-going maintenance. These activities would require minor reallocations of budget and labor to implement, which would have a minor adverse effect on park operations. Because of the improvements, Alternative 2 would have parkwide long-term minor beneficial effects and parkwide long-term minor adverse effects on park operations.

Cumulative Impacts. Along with the parkwide long-term minor beneficial and adverse impacts of Alternative 2 on park operations, cumulative effects of Alternative 2 would be parkwide, minor, and beneficial and parkwide, minor, and adverse.

Conclusions. The focus of Alternative 2 would be on depicting the spatial qualities of the historic setting during the period of significance, which would have parkwide long-term minor beneficial and adverse effects on park operations. Cumulative effects of Alternative 2 would be parkwide, minor, and beneficial and parkwide minor and adverse.

Alternative 3: Reconstructing the Battle Scene

Direct and Indirect Impacts of the Alternative. Alternative 3 would rehabilitate the Pea Ridge landscape to closely resemble what the fighting soldiers witnessed. The landscape that the troops encountered would be closely reflected in the reconstruction of features. This focus would provide new and more accurate interpretive opportunities throughout the site, which would improve the park interpretive staff's ability to effectively convey how the cultural landscape influenced the Battle of Pea Ridge. Alternative 3 would also include preservation, stabilization, and repair of extant features, large trees would be thinned at the East Overlook and at the Federal Trenches to open up historic views and lines of sight. Historic roads and trails would be preserved and repaired to fully convey the circulation network that existing at the time of the battle. Non-extant features would be marked or cleared and some non-extant features would be 'ghosted' and other would be reconstructed. These activities would require initial implementation and on-going maintenance. These activities would require minor increases in budget and labor to implement and maintain, which would have a minor adverse effect on park operations.

tions. Because of the improvements, Alternative 3 would have parkwide long-term minor beneficial effects and parkwide long-term minor adverse effects on park operations.

Cumulative Impacts. Along with the parkwide long-term minor beneficial and adverse impacts of Alternative 3 on park operations, cumulative effects of Alternative 3 would be parkwide, minor, and beneficial and parkwide, minor, and adverse.

Conclusions. The focus of Alternative 3 would be on rehabilitating the Pea Ridge landscape to closely resemble what the fighting soldiers witnessed, which would have parkwide long-term minor beneficial and adverse effects on park operations. Cumulative effects of Alternative 3 would be parkwide, minor, and beneficial and parkwide minor and adverse.

Visual Resources

Methodology

Potential impacts on scenic resources are evaluated based on what is seen by the visitor within the park, which varies depending on the visitor's objectives. Visual resources include the visitor center and the views from the visitor center, tour stops and overlooks along the Tour Road, areas in the battlefield where visitors are able to walk around, and the hiking trails and horse trail in the forests. Therefore, the geographic study area for impacts on scenic resources extends throughout the areas in the park with visitor access, plus those areas outside the park that can be seen by visitors, especially to the north (where housing development has occurred) and south and west (where highways are located). The scenic environment impacts both the visitor anticipation and experience at the site. Short-term impacts on visual resources were considered to be those impacts that would last less than three years, while long-term impacts would be impacts lasting more than three years.

The resource-specific context for assessing impacts of the alternatives on visual resources includes:

- The contribution of visual resources to the visitor experience within the park.
- The contribution of visual resources to understanding the Battle of Pea Ridge and the setting in 1862.
- The effects of changes in vegetation on visual resources.

Visual resources are the features that define the visual character of an area such as natural features, vistas, viewsheds, and architecture. The thresholds of change for the intensity of impacts to visual resources are described in Table 5-6.

TABLE 5-6. VISUAL RESOURCES IMPACT AND INTENSITY

| Impact Intensity | Intensity Description |
|-------------------|---|
| Negligible | Effects would result in barely perceptible changes to existing views. |
| Minor | Effects would result in slightly detectable changes to views in a small area or would introduce a compatible human-made feature to an existing developed area. |
| Moderate | Effects would be readily apparent and would change the character of visual resources in the area. The visitor would be aware of the effects associated with the alternative and would likely express a neutral to negative opinion about the changes. |
| Major | Effects would be highly noticeable and visible from a considerable distance or over a large area. The character of visual resources would change substantially. The visitor would be aware of the effects associated with the alternative and would likely express a strong negative opinion about the changes. |

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the Alternative. Under the no action alternative, the park would retain and enhance a substantial portion of the historic and visual character of the battlefield landscape; however, the natural and man-made changes that have altered the visual character of the landscapes would not be substantially managed or changed. There would also be no change in management of contributing cultural landscape features. By not substantially managing or changing the altered landscape, the interpretation value and visitor understanding of the battlefield landscape would continue to deteriorate over time. The natural and man-made modifications and alterations that have occurred within and adjacent to the battlefield landscape over time have altered it from its 1862 appearance. This is especially apparent from tour stops with large vistas of the battlefield, such as the East Overlook. Because of this, under the no action alternative, visual resources of the park would be diminished.

Cumulative Impacts. Past and ongoing NPS management of the vegetation has maintained the viewshed within the park. The current conditions of the vegetation affect visual resources because current vegetative conditions do not accurately represent the battlefield landscape and alter and partially obscure views in some areas of the battlefield. Reasonably foreseeable future actions include implementing the vegetation management plan, the EPMP to control invasive and noxious plant species, and implementing the FMP through prescribed burning to reduce hazardous fuels and trees. Implementing these plans would have a beneficial effect on park visual resources by opening historic vistas and viewsheds and better conveying the spatial context of the cultural landscape at the time of the battle. The relocation of U.S. Highway 62 would likely directly improve visitor experience

by moving the highway away from the park, thereby decreasing visual disturbances. Present and future residential and commercial development surrounding the park would directly adversely affect the viewshed by diminishing the landscape setting and backdrop of the battle. When combined with past, present, and reasonably foreseeable future actions, the no action alternative would have parkwide moderate beneficial and parkwide minor adverse cumulative impacts on visual resources.

Conclusions. Under the no action alternative, the visual character of the cultural landscape would not be substantially changed. Views of the battlefield would not accurately convey the historic character of cultural landscape during the period of significance. As a result, the no action alternative would have a parkwide long-term minor adverse effect on visual resources of the park.

Alternative 1: Investigating and Preserving the Battle Landscape

Direct and Indirect Impacts of the Alternative. Alternative 1 focuses on addressing future research and investigation needed to accurately convey the historic setting, particularly in the landscape character areas. This would eventually improve visual resources as new knowledge and understanding are incorporated into vegetation management and preservation of cultural landscape features. Alternative 1 would also include some preservation, stabilization, and repair of extant features, which would somewhat improve visual understanding of the site. Large trees would be thinned at the East Overlook and at the Federal Trenches to open up historic views and lines of sight. Because of the many improvements, Alternative 1 would have a parkwide long-term minor beneficial effect on visitor experience.

Cumulative Impacts. Along with the parkwide long-term minor beneficial impact of Alternative 1 on visitor experience, cumulative effects of Alternative 1 would be parkwide, moderate, and beneficial and parkwide, minor, and adverse.

Conclusions. The additional knowledge and understanding of the cultural landscape of the park and select preservation, stabilization, and repair of extant features would have a parkwide long-term minor beneficial effect on visitor experience. Cumulative effects of Alternative 1 would be parkwide, moderate, and beneficial and parkwide minor and adverse.

Alternative 2: Preferred Alternative, Revealing the Battle's Context

Direct and Indirect Impacts of the Alternative. As with Alternative 1, under Alternative 2, there would be additional research and investigations, but the alternative would focus on depicting the spatial qualities of the historic setting during the period of significance. This focus would provide more accurate depictions of the cultural landscape, which would improve visual resources of the park. Because of the many improvements, Alternative 2 would have a parkwide moderate long-term beneficial effect on visual resources.

Cumulative Impacts. Along with the parkwide long-term moderate beneficial impact of Alternative 2 on visual resources, cumulative effects of Alternative 2 would be parkwide, moderate, and beneficial and parkwide, minor, and adverse.

Conclusions. More accurately depicting the historic character of the park during the period of significance under Alternative 2 would have parkwide long-term moderate beneficial effects on visual resources. Cumulative effects of Alternative 2 would be parkwide, moderate, and beneficial and parkwide, minor, and adverse.

Alternative 3: Reconstructing the Battle Scene

Direct and Indirect Impacts of the Alternative. Alternative 3 would rehabilitate the Pea Ridge Battlefield landscape to closely resemble what the fighting soldiers witnessed. The landscape that the troops encountered would be closely reflected in the reconstruction of features. This alternative provides the opportunity for the most immersive experience for visitors, recreates the most features, and offers to tell the story of the greater landscape. This alternative would most extensively open up view sheds and lines of site in the park. Much more of the special context of the cultural landscape would be visible. Because of these changes, under Alternative 3, effects on visual resources would be parkwide, long-term, moderate, and beneficial.

Cumulative Impacts. Along with the parkwide long-term moderate beneficial impact of Alternative 3 on visual resources, cumulative effects of Alternative 3 would be parkwide, moderate, and beneficial and parkwide, minor, and adverse.

Conclusions. More accurately visually depicting the historic character of the park during the period of significance under Alternative 3 would have parkwide long-term moderate beneficial effects on visual resources. Cumulative effects of Alternative 3 would be parkwide, moderate, and beneficial and parkwide, minor, and adverse.

