



National Park Service
U.S. Department of the Interior
Palo Alto Battlefield National Historical Park
Brownsville, Texas

Finding of No Significant Impact Integrated Vegetation Management Plan

Background

In compliance with NEPA, the National Park Service (NPS) prepared an Environmental Assessment (EA) to examine various alternatives and environmental impacts associated with the proposed development of an Integrated Vegetation Management Plan at Palo Alto Battlefield National Historical Park (PAAL). PAAL is charged with preserving and interpreting the sites of the two opening battles of the U.S.-Mexican War for the education, benefit, and inspiration of present and future generations. The battles of Palo Alto and Resaca de la Palma occurred on May 8, and May 9, 1846 respectively. Over the past century and a half, the physical environment at both battlefields has undergone dramatic changes due to twentieth century cultural activities. The majority of the Resaca de la Palma Battlefield site has been lost to urban development, while the remaining 34 acre tract that the park administers retains little of its historic character. In contrast, the site of Palo Alto Battlefield remains relatively undeveloped and largely unchanged since the time of the battle.

Despite the undeveloped nature of Palo Alto, twentieth century activities have altered the physical environment and continue to degrade the historic character of the site. The principal concern is the continuing process of encroachment, and eventual domination, of native woody and cacti species on the historic gulf cordgrass prairie as a result of an altered hydrologic regime, past land management practices, and the lack of a proactive vegetation management program. Despite these changes, the park has distinct opportunities to restore or mitigate altered landscape situations on the core battlefield of Palo Alto through vegetation management practices. Consequently, PAAL could fulfill its legislative mandate of preserving the historic character of Palo Alto Battlefield by developing a comprehensive and integrated plan for managing the vegetation on the site with the goal of restoring and maintaining the cultural landscape of the core battlefield. The plan will also design vegetation management strategies for the areas of the park outside the core battlefield of Palo Alto with the intention of providing visitors with safe and enjoyable access to the park, while enhancing and nurturing the native biodiversity.

Selected Action

Alternative B, Proactive Vegetation Management, is the preferred alternative and NPS's selected action because it best meets the purpose and need of the project as well as the project objectives to 1) restore and maintain the cultural landscape and the historic character of the core battlefield area of Palo Alto in most effective, efficient, and environmentally sensitive manner, 2) control, with the long-term goal of eliminating, the presence of exotic plants within the park, and 3) provide visitors with safe and enjoyable access to the resources the park is charged with preserving and interpreting.

Under Alternative B, a comprehensive and integrated vegetation management program has been developed utilizing a full range of mechanical, cultural (including the use of prescribed fire), chemical, and biological treatments to restore and maintain the cultural landscape in the

core battlefield area at Palo Alto. As part of this program, specific multi-purpose and targeted vegetation monitoring protocols will be developed and implemented in coordination with the NPS personnel of the Gulf Coast Inventory and Monitoring Network, Gulf Coast Exotic Plant Management Team, and fire ecologists to: (1) define the effectiveness of specific vegetation management treatments, (2) provide early detection of newly invading species, (3) determine fire effects on native and non-native vegetation, and (4) determine cultural landscape restoration success in the core battlefield of Palo Alto. This will allow the park to adjust its management strategy so the best results can be achieved with the least amount of effort and impact to the environment. Alternative B serves as both the NPS and environmentally preferred alternative.

Mitigation Measures

General Best Management Practices

- Vehicles and equipment will use existing roads and trails to the maximum extent practical.
- Vehicles and equipment will only be allowed on the core battlefield when ground conditions are dry.
- Follow Integrated Pest Management process in regard to “need” to use herbicide, “type” of herbicide, “amount” of herbicide to use, “when” to apply, and “how” to apply.
- Herbicides will be applied according to application rates specified on the product label.
- PAAL will not purchase more herbicide than it plans or could use in a year.
- Use of equipment in high visibility areas will be avoided during peak visitation periods to the extent feasible.
- PAAL will utilize highly experienced and environmentally sensitive personnel to carry out the prescribed burn events by partnering with the local U.S. Fish and Wildlife Fire Crews, Biologists, and Ecologists.

Human Health and Safety

- Job Hazard Analysis (JHA) will be completed for all tasks.
- A Green/Amber/Red (GAR) risk assessment will be completed prior to the initiation of any tasks.
- These safety documents, as well as all Standard Operating Procedures (SOP) and an Accident Plan will be reviewed and revised if necessary by all staff, contractors, or volunteers at a project orientation meeting prior to any fieldwork.
- Regularly scheduled tail-gate safety meetings will be conducted.
- Safety protocols for storing, mixing, transporting, handling spills, and disposing of unused herbicides and containers will be developed and followed.
- Herbicide applications will only be applied by personnel trained and supervised by a park approved person.
- All herbicide labels will be followed to ensure proper application is used in a safe manner.
- Park staff will keep all park visitors informed of daily work schedules and treatment locations.

- Visitors will not be allowed in treatment areas during the treatment process.
- Park trails will be closed during prescribed fire treatment events.
- Signs will be posted to inform visitors of chemically treated areas.
- All federal, state, and local regulations regarding herbicide use will be followed at all times.
- Prescribed fire events will only be carried out during periods of suitable meteorological conditions and with an approved smoke management plan.

Cultural Resources

- Management actions will take place on previously archeologically surveyed areas.
- Ground disturbing activities will be prohibited, except for the planting of gulf cordgrass.
- No work will be carried out when ground conditions are damp.
- After prescribed fire events, the site will be closely monitored to ensure that trespassers are not looting the site.
- All work performed will be coordinated with and monitored by the park's cultural resource staff.
- Equipment used for re-vegetation and restoration actions will be evaluated and chosen with regards the effectiveness for accomplishing the tasks, while causing the least amount of impacts to cultural resources.
- Tree felling, removals, and herbicide applications will be made by trained personnel only. Trees will be cut as close to the ground as possible and herbicide applied directly to the fresh cut stump.
- If new or unexpected cultural resources are identified within the treatment area, all work will be halted immediately until appropriate investigation and/or documentation can be made.

Water Resources

- No herbicide application will be made within 24 hours of an expected rain event to minimize any potential for herbicide "wash-off" into surface and/or ground water.
- All precautions will be taken to ensure that herbicide applications are direct to the targeted plants and with the minimization of any potential for herbicide overspray.
- Only herbicides that are registered for use in or near water will be used in those areas.
- Herbicides with high soil retention will be used in areas where there is potential to affect surface water or ground water resources.
- Highly water-soluble herbicides will not be used in areas where there is potential to affect surface water or ground water resources.
- Herbicide pH and soil pH will be considered to select the herbicide with the lowest leaching potential, in areas where there is the potential to affect surface water or ground water resources.

Air Resources

- Herbicides will only be applied under conditions of little to no wind and under the appropriate air temperature regimes to minimize potential for air resource impacts as a result of undesired herbicide overspray and/or volatilization.
- Herbicides will be applied using coarse sprays to minimize the potential for drift. Avoid combinations of pressure and nozzle type that will result in fine particles (mist). Add thickeners if the product label permits.
- Prescribed fire events will only be carried out during periods of suitable meteorological conditions with an approved smoke management plan as required.

Soils

- No herbicide application will be made within 24 hours of an expected rain event to minimize any potential for herbicide "wash-off" onto the ground surface.
- Ground disturbing activities are prohibited with all proposed treatment activities, save for the planting of gulf cordgrass plugs.
- All precautions will be taken to ensure that herbicide applications are direct to the targeted plants and with the minimization of any potential for herbicide overspray.
- Herbicide applications will only be applied by personnel trained and supervised by a state licensed applicator.
- Damage to soils will be minimized by using existing access routes to the extent possible.
- Herbicides with longer persistence will be applied at lower concentrations and with less frequency to limit the potential for accumulation of herbicides in the soils.

Vegetation

- All herbicide applications will be applied by appropriately trained personnel and under appropriate environmental conditions as specified on the MSL.
- All herbicide application equipment (such as hand and backpack sprayers) will be checked daily to ensure proper functioning condition prior to use.
- The limits of weed management and restoration activities will be clearly defined to minimize any adverse effects to native vegetation.
- All re-vegetation/restoration projects at the park will use weed-free topsoil, seed, and mulch materials.
- All equipment used within the park will be cleaned to remove all remnants of exotic plant materials (this includes park mowers that are used to cut exotic grasses at REPA or along the highway at PALO) prior to being used within the park.
- All seed mixtures used for re-vegetation/restoration activities will be based on native genotypes from as local of source as is possible. All seed mixtures must be appropriately certified (tagged) and will be inspected (to ensure appropriate mixture and absence of weed seed) prior to planting by park resource management staff.
- All straw mulches and/or organic forms of erosion control used at the park will be certified weed-free.

- Annual follow-up monitoring for weed presences of all re-vegetated/restored areas will be conducted following completions of re-vegetation activities.
- Any new noxious weed species found on site will be controlled or eradicated immediately to prevent further spread.
- No non-native plant species with potential for spread will be introduced into park landscaping as per NPS Management Policies (2006).

Wildlife

- Treatment sites will be walked through prior to treatment initiation to assist in minimizing wildlife presence during treatment activities.
- All herbicide use will be limited to the minimal application needed to obtain management objectives and applied only under the appropriate environmental conditions.
- All efforts will be made to minimize implementation of treatment actions during sensitive wildlife breeding/nesting seasons.
- Noise levels associated with loud equipment use will be minimized to only the timeframe(s) necessary to accomplish identified vegetation management actions.

Alternatives Considered

Three alternatives were evaluated in the EA including a no action alternative, a proactive vegetation management alternative, and an improved vegetation management alternative. Under Alternative A, No Action, current vegetation management practices would continue. These management activities would remain limited and focused on listed noxious weed species and exotic plant species, relying largely on the support of regional Exotic Plant Management personnel. Routine maintenance of vegetation for visitor safety and access in the developed areas of the park would continue. The current vegetation management program is not fully developed to include prevention and early detection methodologies for exotic species. Altered landscape restoration actions would remain limited and would not eliminate or improve visual intrusions on the cultural landscape of the core.

Under Alternative C, Improved Vegetation Management, vegetation management practices would be expanded to include mechanical, cultural (excluding the use of prescribed fire), chemical, and biological treatments. Efforts to restore and maintain the historic coastal prairie of the core battlefield at Palo Alto would include exotic plant management, invasive native tree and cactus removal, native seed augmentation, and native gulf cordgrass planting. Limited vegetation monitoring would be implemented to assess basic qualitative “change over time” analyses. The visual and ecological quality of the site would be improved above the no-action condition, but the park would have to sustain an intense level of effort for the foreseeable future in order to maintain the restored cultural landscape of the core battlefield.

Alternative B, Proactive Vegetation Management, is the preferred alternative, as described in the previous section.

Environmentally Preferable Alternative

According to the CEQ regulations implementing NEPA (43 CFR 46.30), the environmentally preferable alternative is the alternative “that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and

natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources. In some situations, such as when different alternatives impact different resources to different degrees, there may be more than one environmentally preferable alternative.”

Alternative B is the Environmentally Preferable Alternative. PAAL developed the various vegetation management strategies put forth in Alternative B through intensive and extensive collaboration with numerous subject matter experts concluding that this alternative provides the most effective, efficient, and environmentally sensitive long-term means for restoring and maintaining the historic character of the core battlefield area at Palo Alto. In contrast, Alternative A, would allow the cultural landscape of the core battlefield area of Palo to continue to degrade, adversely affecting the historic character of the site and the visitor experience. Alternative B is designed for a relatively intensive effort of mechanical, chemical, and cultural treatments during the initial stages of implementation, but develops into a less intensive effort, relying largely on the cultural treatment of prescribed fire to maintain the desired condition in the core battlefield of Palo Alto. The key difference between Alternative B and Alternative C is the use of prescribed fire. Alternative C was developed to provide park managers with an alternative that does not use prescribed fire, since it appeared to be the one management strategy that was potentially controversial. However, the amount of effort and funds required to maintain a restored gulf cordgrass prairie without prescribed fire would be exponentially greater. In addition, the use of prescribe fire would reintroduce a natural process to the landscape that has been essentially eliminated by modern cultural practices. Therefore, Alternative B is determined to be the most efficient, effective, and environmentally preferable alternative for meeting the overarching objectives of restoring and maintaining the core battlefield of Palo Alto to its 1846 appearance and enhancing the native biodiversity in the park. The analysis of the environmental impacts produced by implementing the preferred alternative have been determined to be beneficial, or negligible to minor adverse and of short duration.

Why the Selected Action Will Not Have a Significant Effect on the Human Environment

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

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.

Implementation of the preferred (selected) alternative will result in some minor and short term adverse impacts; however, the overall benefit of the project, particularly to cultural landscape of the core battlefield area at Palo Alto and to the visitor experience, outweighs these negative effects. The adverse effects are summarized as follows. The implementation of various vegetation management activities, such as the mechanical removal of woody vegetation and cacti, planting of gulf cordgrass, herbicide treatment of exotic species, and prescribed fire events may be a visual and audio distraction to the visitor or may limit their access on to the core battlefield of Palo Alto. However, the results of these activities will significantly restore and maintain the historic character of the Palo Alto Battlefield unit, allowing PAAL to fulfill one of its' legislative mandates, as well as enhancing the visitor experience considerably.

The degree to which the proposed action affects public health or safety

The implementation of the preferred alternative will have a negligible effect on public health and safety. The Mitigating Measures and General Best Management Practices will keep the public away from any vegetation management activities that could be detrimental to public health and safety. In addition, the prescribed fire events will be carried out by local U.S. Fish and Wildlife

crews that have extensive experience in this region. This experience coupled with the following of all local, state, and federal regulations will limit the risk to public health or safety from this activity.

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

The preferred alternative is designed to be the most effective and efficient way to restore and maintain the historic coastal prairie of Palo Alto. This will enhance the historic character of the site, improve the cultural landscape of the core battlefield. The battlefield and associated features are the only known significant cultural resources within the area to be restored. This alternative will also serve to preserve a portion of the region's coastal gulf cordgrass prairie, which continues to be lost due to urban development and agricultural practices. These actions will also serve to partially restore the ecological function of this wetland prairie. This alternative is also designed to improve the native biodiversity in the park lands outside of the core battlefield. Lastly, this alternative will not affect any prime farmlands, wild and scenic rivers, or ecologically critical areas.

The degree to which the effects on the quality of the human environment are likely to be highly controversial

Throughout the environmental process, the proposal to develop and implement a proactive vegetation management program to restore and maintain the historic character of the prairie of Palo Alto was not highly controversial, nor are the effects expected to generate future controversy. All public and professional opinions expressed during the development of the strategies put forth in the preferred alternative were in support of the methods proposed to improve the historic character of the site. During the formal public comment period no comments were received.

The degree to which the possible effects on the quality on the human environment are highly uncertain or involve unique or unknown risks

The effects of implementing a proactive vegetation management plan at PAAL are fairly straightforward. The environmental process has not identified any effects that may involve highly unique or unknown risks.

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

The preferred alternative is not expected to set a precedent for future actions with significant effects, nor does it represent a decision in principle about a future consideration, since the strategies put forth in this alternative represent well established and effective vegetation management strategies utilized by various private and public land managers.

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.

Cumulative effects were analyzed in the EA and no significant cumulative impacts were identified.

The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The two units of Palo Alto Battlefield National Historical Park consist of Palo Alto Battlefield National Historic Landmark and Resaca de la Palma Battlefield National Historic Landmark. There are no other known cultural resources that are considered to be eligible for listing in the National Register of Historic Places. The preferred alternative is designed to be the most effective and efficient way to restore and maintain the cultural landscape of the core battlefield of Palo Alto. This will greatly improve the historic character of this National Historic Landmark and National Historical Park. The park has determined that aside from improving the cultural landscape within the core battlefield area at Palo Alto, the management strategies put forth in the preferred alternative will have No Adverse Effect on neither battlefield nor any other cultural resources. The Texas State Historic Preservation Officer concurred with this determination via a letter dated December 9, 2013.

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.

There will be “no adverse effect” on endangered or threatened species or habitat per §7 of the Endangered Species Act. In fact the results of restoring the cultural landscape of the core battlefield area of Palo Alto will improve the habitat for the one confirmed T&E species on the park, the Aplomado falcon. The other two listed animal species in the area are the ocelot and the jaguarundi. Neither of these two feline species would be expected to reside at the park, since PAAL does not have the habitat to support either of them. However, the nurturing of the dense native brush outside the core battlefield area of Palo Alto, may provide suitable cover for a transient individual. In addition, PAAL does not possess the appropriate environment for any of the listed plant species in the area. A letter dated December 11, 2013 from the U.S. Fish and Wildlife Service concurs with this determination. Local and regional natural resource specialists from Texas Parks and Wildlife Department were consulted during the development of the management strategies put forth in the preferred alternative and were provided opportunities to review drafts of the *Integrated Vegetation Management Plan and Environmental Assessment*.

Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment

The action will not violate any federal, state, or local laws or environmental protection laws.

Public Involvement and Native American Consultation

The EA was made available for public review and comment during a 30-day period (the 30 day period was extended due to the government shut down in October of 2013) ending November 8, 2013. To notify the public of this review period, a letter was mailed to stakeholders, Native American tribes, interested parties, and newspapers. Copies of the document were sent to certain agencies, interested parties, and to four tribes during the scoping period; made available in local repositories; and posted on the NPS PEPC website at <http://parkplanning.nps.gov/>. No comments were received during this review period.

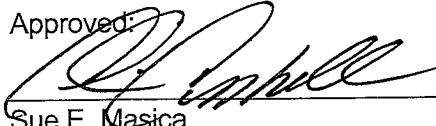
Conclusion

As described above, the preferred alternative does not constitute an action meeting the criteria that normally require preparation of an environmental impact statement (EIS). The preferred alternative will not have a significant effect on the human environment. Environmental impacts that could

occur are limited in context and intensity, with generally adverse impacts that range from localized, short- to moderate-term, and negligible to minor. There are no unmitigated adverse effects on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, NPS has determined that an EIS is not required for this project and thus will not be prepared.

Approved:



Sue E. Masica

Regional Director, Intermountain Region, National Park Service

1/3/14
Date

Appendix – Non-Impairment Finding

National Park Service's *Management Policies, 2006* require analysis of potential effects to determine whether or not actions will impair park resources. The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values.

However, the laws do give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within park, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to pursue or restore the integrity of park resources or values and it cannot be further mitigated.

The park resources and values that are subject to the no-impairment standard include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. The NPS's threshold for considering whether there could be an impairment is based on whether an action will have significant effects.

Impairment findings are not necessary for visitor use and experience, socioeconomics, public health and safety, environmental justice, land use, and park operations, because impairment findings relates back to park resources and values, and these impact areas are not generally considered park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values. After dismissing the above topics, topics remaining to be evaluated for impairment include cultural landscapes, archeological resources, air and water resources, soils, and native plants and animals.

Fundamental resources and values for the Palo Alto Battlefield NHP are identified in the Foundation Document (2013). According to that document, of the impact topics carried forward in this EA, only Battlefield Sites (archeological resources), the Historic Landscape of Palo Alto (cultural landscape), and Species Habitat (native plants and animals) are considered necessary to fulfill specific purposes identified in the establishing legislation of the park; and are key to the natural or cultural integrity of the park.

- **Battlefield Sites** – This fundamental resource includes key sites currently managed by the National Park Service, including Palo Alto and Resaca de la Palma, as well as sites outside the park boundary associated with the 1846 opening campaign of the U.S.-Mexican War, including Fort Brown, Carricitos, Point Isabel, and Camp Belknap. The preferred alternative involves the implementation of vegetation management activities at both Palo Alto and Resaca de la Palma. At Palo Alto these vegetation management strategies are designed to restore and maintain the historic grassland prairie, which will improve the historic character of the site. The only ground disturbing activity is the planting of gulf coast cordgrass, which will be carried out in such a manner that will not disturb the archeological record. In addition, the core battlefield of Palo Alto has recently been thoroughly investigated through a systematic archeological metal detector survey. Therefore, there will be no impairment to the Battlefield Sites.
- **Historic Landscape of Palo Alto** – The Palo Alto battlefield within the park boundary retains a high level of integrity that provides an opportunity to experience the site much as it looked during the time of the battle in 1846. The preferred alternative is designed to restore and maintain the historic character of the site, thus improving the Historic Landscape of Palo Alto. Therefore, there will be no impairment to the Historic Landscape of Palo Alto.
- **Species Habitat** – Habitat protection for native plant and animal species is an important resource management goal for the park. The preferred alternative is designed to restore plant communities back to their mid nineteenth century structure within the core battlefield area at Palo Alto. This should take this management zone back to its' natural condition prior to the twentieth century cultural alterations. The preferred alternative is also designed to remove exotic plant species and promote native biodiversity throughout the park. Therefore, there will be no impairment to the Species Habitat.

In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of park resources and values from implementation of the preferred alternative.