National Park Service
U.S. Department of the Interior

Waco Mammoth Site

Special Resource Study/Environmental Assessment

July • 2008

This report has been prepared to provide Congress and the public with information about the resources in the study area and how they relate to criteria for inclusion within the national park system. Publication and transmittal of this report should not be considered an endorsement or a commitment by the National Park Service to seek or support either specific legislative authorization for the project or appropriation for its implementation. Authorization and funding for any new commitments by the National Park Service will have to be considered in light of competing priorities for existing units of the national park system and other programs.

Cover illustration by Joe Taylor.

Summary

PURPOSE AND NEED

This special resource study is investigating, for possible designation as a new unit of the national park system, the site within the city limits of Waco, Texas, where the remains of a Pleistocene Columbian Mammoth herd were discovered.

Special resource studies are initiated at the direction of Congress. On December 16, 2002, Public Law 107-341 was enacted, directing the secretary of the interior, in consultation with the state of Texas, the city of Waco, and other appropriate organizations, to conduct a special resource study. The study would determine the national significance, suitability, and feasibility of designating the Waco Mammoth Site as a unit of the national park system, and the need for direct management by the National Park Service.

RESOURCE DESCRIPTION

The Waco Mammoth Site is located 4.5 miles north of Waco's city center. The study area includes over 109 combined acres under the ownership of the city of Waco and Baylor University.

Both entities have formed a partnership for the purpose of providing preservation and interpretation of the site's paleontological resources. A number of collected specimens are currently housed in Baylor University's Mayborn Museum Complex, while *in situ* specimens remain at the discovery site owned by the city of Waco.

Currently, visitor access to the Waco Mammoth Site is restricted and would continue to be so until the current actions already underway by the Waco community to erect an excavation shelter and provide for visitor access are completed. This would be the first time that public access would be accommodated at the site and mark a very special milestone for members of the Waco community who have been actively involved in preservation efforts there for almost 30 years.

SPECIAL RESOURCE STUDY PROCESS

To receive a favorable recommendation from the National Park Service, a proposed addition to the national park system must meet four criteria:

(1) Possess nationally significant resources

(2) Be a suitable addition to the system

(3) Be a feasible addition to the system

(4) Require direct management by the National Park Service instead of protection by another public agency or the private sector

National Significance

The paleontological resources of the Waco Mammoth Site meet the National Park Service's established criteria for national significance. The combination of both *in situ* articulated skeletal remains and the excavated specimens from the site represents the nation's first and only recorded discovery of a nursery herd of Pleistocene mammoths. The resource possesses exceptional interpretive value and provides superlative opportunities for visitor enjoyment and scientific study. The

resource retains a high degree of integrity as many of the remains represent fully articulated specimens of varying age groups. Their location and position have been recorded; the stratigraphy of the site has been studied in detail; and collected specimens have been placed under the curatorial care of a single institution.

Suitability

The resources of the Waco Mammoth Site meet the National Park Service's established suitability criteria for consideration as a new unit of the national park system. Including this site would expand and enhance the diversity of paleontological resources already represented by other parks in the system.

Feasibility

The Waco Mammoth Site is considered a feasible candidate for consideration as a new unit of the national park system. There are opportunities for efficient administration by the National Park Service at a reasonable cost, especially if existing partnership support could be maintained and enhanced.

Need for Direct Management by the National Park Service

The fourth and final criterion in the special resource study process is the determination of the need for direct management by the National Park Service. With the resources of the Waco Mammoth Site having met the criteria for national significance, suitability, and feasibility, it was deemed appropriate to investigate the potential for inclusion of the site in the national park system and for the National Park Service to take on key roles in a partnership arrangement. Comments received during the initial public scoping phase of the study project supported expanding the existing partnership between Baylor University and the city of Waco to include the National Park Service. It was found that direct NPS management is not the only practicable means for meeting the goals of protecting resources and furthering public use; however, to meet these goals to the fullest extent, there are significant roles that the National Park Service could have in site operation and management.

MANAGEMENT OPTIONS

The methodology adopted to assist in the evaluation of the need for direct management by the National Park Service included developing a range of management options or alternatives, analyzing the environmental consequences of each, and providing a comparison of the attributes of each alternative.

Alternative A – Continuation of Current Management Trend

Alternative A is the no-action alternative, which represents the continuation of current management trends at the Waco Mammoth Site and serves as a base-line measurement for comparing three proposed alternative management strategies. The existing cooperative management arrangement between the city of Waco and Baylor University would continue. The local community would continue to play a key partnership role in supporting current preservation and public access initiatives. Additional staffing, new programs, activities, or site development beyond the efforts currently underway by the Waco community are not considered in this alternative.

Alternative B – Partnerships Led by the City of Waco

The existing cooperative management arrangement between the city of Waco and Baylor University would be expanded with additional partners, with the city taking a lead role. National natural landmark status would be actively pursued, allowing the city to seek technical assistance from the National Park Service for site resource preservation, interpretation, and educational research. Additional partnerships, such as local community initiatives, land trusts, foundations, federal, state, and local governments, and nongovernmental organizations, would also

be sought to assist with developing and managing the site. This alternative would protect, provide opportunities for research, and interpret core paleontological resources. It also would give the city freedom to pursue possible broader ideas such as providing environmental education and recreational opportunities. An option under this alternative could include pursuing designation as a "National Park Service affiliated area" to further strengthen National Park Service involvement.

Alternative C – Partnerships Led by the National Park Service

Waco Mammoth Site would be a new unit of the national park system, in partnership with the city of Waco, Baylor University, and others. The National Park Service would take lead responsibility for ensuring the protection, scientific study, and visitor enjoyment of paleontological resources, enlisting the help of partners for this mission. Partners would also take the lead for initiating additional recreational and educational opportunities within the lands surrounding the core paleontological resource.

Alternative D – Managed as a Focused Unit of the National Park System

Waco Mammoth Site would be a new unit of the national park system. Ownership of all paleontological resources (*in situ* fossils and the collection of fossils currently housed at Baylor University) and their associated documentation would be transferred to the federal government and management would be by the National Park Service. The National Park Service would focus on a core mission of protection, scientific study, and interpretation of paleontological resources. The National Park Service would not likely expand beyond this core focus to initiate other projects such as environmental education or other recreational opportunities. Partners would still play a role in educational outreach, interpretive programs, and site security to assist the National Park Service with achieving its core mission.

The matrix on the following page compares and contrasts the major components of each alternative.

Environmental Assessment

In order to comply with the National Environmental Policy Act, an environmental assessment accompanies this special resource study. The analysis of potential environmental consequences to the resources resulting from implementation of the alternatives found that there is no potential for significant environmental effects. For all action alternatives, it is anticipated that there would be moderate, long-term, beneficial impacts to the fundamental resources of the Waco Mammoth Site, the visitor experience, and the socioeconomic environment. Minor, long-term, adverse impacts are anticipated to the other resources of the site (soils and prime farmland; floodplains and wetlands; vegetation, wildlife, and wildlife habitat) to accommodate future development to enhance the visitor experience and to provide for management support at the site. The effect on special status species cannot be determined for any of the action alternatives until more definitive implementation plans are developed for the site. There would be moderate, long-term, beneficial to moderate, long-term, adverse impacts to the city of Waco, Baylor University, or the National Park Service, depending on the management alternative.

The environmental assessment contributed to the finding that direct management by the National Park Service is not the only practicable means for meeting the goals of protecting resources and furthering public use. However, to meet these goals to the fullest extent, there are significant roles that the National Park Service could have in guiding the preservation efforts of the paleontological collection, enhancing the interpretive and educational outreach programs, and enabling an expanded level of scientific research and study of this special resource.

Most Effective and Efficient Alternative

The 1998 Omnibus Parks Management Act (*Public Law 105-391 §303*) and NPS policy mandate that each special resource study identify the alternative or combination of alternatives which would, in the professional judgment of the director of the National Park Service, be most effective and efficient in protecting significant resources and providing opportunities for appropriate public enjoyment. For the purposes of this study, effectiveness and efficiency are defined as the capability to produce desired results with a minimum expenditure of energy, time, money, or materials.

A comparison of costs associated with each alternative indicates that alternative A, the no-action alternative, which continues current management trends, would require the least expenditure of energy, time, money, and materials. However, alternative A does not include increases in staffing or operational funding; consequently accommodating visitor access to the site is limited in this alternative to only monthly scheduled events. This is not a reasonable level of public enjoyment for such a nationally significant treasure, and as such, alternative A is the least effective of all the alternatives.

Of the three action alternatives, alternative D requires the least expenditures of energy, time, money, and materials, although the range of visitor opportunities is limited to just those associated with the core paleontological resources. Alternatives B and C provide a greater range of visitor enjoyment opportunities without compromising resource integrity. While the range of visitor opportunities are similar under alternatives B and C, alternative C provides a greater level of assurance for maintaining long-term resource protection. Alternative C assumes a full time, onsite commitment of NPS specialists with experience in the management and interpretation of paleontological resources. The day to day efforts of NPS resource managers and interpreters under this alternative has the potential to provide a more stable and consistent approach for protecting and enhancing the conditions of paleontological collection, enhancing interpretive and educational programs, and enabling an expanded level of scientific research and study related to the special resource in comparison to the periodic NPS technical assistance provided under alternative B. Assuming initial and continued funding is made available to support this level of resource stewardship, alternative C is the most effective and efficient management alternative.

The National Park Service's preferred alternative has not been identified in the study report; a recommendation will be prepared after considering public comments on the study.

After public review, comments will be collected, analyzed, and summarized. A final compliance document will be prepared to accompany the study.

Summary of Alternatives

	Alternative A Continuation of current management trends	**Alternative B** Partnerships led by the city of Waco	**Alternative C** Partnerships led by the National Park Service	**Alternative D** Managed as a focused unit of the National Park System
Overall Management Framework	The existing cooperative management arrangement between the city of Waco and Baylor University is continued.	The existing cooperative management arrangement between the city of Waco and Baylor University is expanded with additional partners, with the city assuming the lead responsibility for managing the site as a city park.	Waco Mammoth Site would be a new unit of the national park system, in partnership with the city of Waco, Baylor University, and others.	Waco Mammoth Site would be a new unit of the national park system, with the entire paleontological resource managed onsite by the National Park Service (*in situ* specimens and the paleontological collection currently housed at Baylor University).
Concept for Management	Managed for the continuing preservation and protection of the paleontological resources, conducting scientific study, and providing for onsite visitor enjoyment and understanding.	Same as alternative A, plus… An expanded range of recreational and environmental educational opportunities could be provided by the city.		Same as alternative A.
Site Recognition	Potential National Natural Landmark Eligible for NPS Affiliated area status	The city pursues National Natural Landmark designation. National Park Service affiliated area status may be considered by Congress to further strengthen NPS involvement.	New unit of the national park system	
Initial Costs	(1)	Waco Community $8.1 million	Waco Community $8.1 million NPS $0.6 million	NPS $2.6 million
Annual Costs	(2)	City of Waco $300,000 Mayborn Museum $45,000 NPS (for 5 years) $25,000	City of Waco $300,000 Mayborn Museum (2) NPS $345,000	NPS $768,500

(1) It is assumed that the Waco community efforts to erect a protection shelter over the excavation area and to provide for controlled visitor access to the site are already underway. Funding for additional staffing, programs, or facilities is not included under the no-action alternative.

(2) Annual costs for managing the Waco Mammoth Site are difficult to quantify as staff support from the city of Waco and/or the Mayborn Museum Complex is an assigned collateral duty among a range of other responsibilities.

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