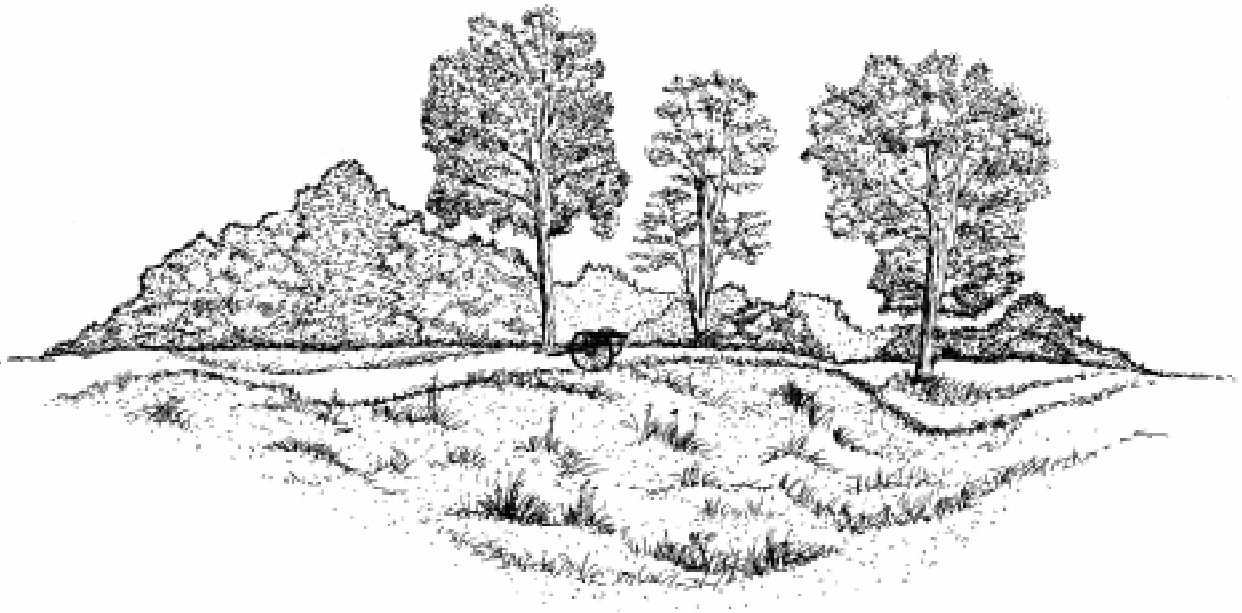


GUIDE TO SUSTAINABLE EARTHWORKS MANAGEMENT

90% DRAFT



NATIONAL PARK SERVICE
IN ASSOCIATION WITH THE
GEORGIA TRUST FOR HISTORIC PRESERVATION

1998

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FORWARD

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INTRODUCTION

Earthworks Management in the National Park Service

Earthworks, also known as fieldworks or earthen fortifications, have been used throughout American military history as a form of defense. The basic function of earthworks is relatively simple - to place a barrier between an army and its enemy. Earthworks took on many different forms and levels of complexity depending on the circumstances, the military strategy, and the particular requirements. Today, hundreds of linear miles of battle earthworks survive in landscapes east of the Mississippi River, although they are often only a fraction of their original size and extent. Protecting and interpreting earthworks has been a major concern of the National Park Service since becoming steward of some of the most significant American battlefields over sixty years ago. While management strategies have evolved through the years, the basic threats to earthworks have remained constant. The effects of natural processes, primarily erosion, have been overlain by the consequences of human activity, which ranges from the indirect results of urbanization in the vicinity of earthworks to the direct impacts of interpretive, recreational, and landscape maintenance activities. These threats place many earthworks in danger of degradation or loss over time. They are magnified by an uncertain future of financial, material, and human resources required that are to adequately preserve these fragile structures.

Earthworks Landscape Management Manual

The need for guidance to appropriately manage earthworks led to the development of the *Earthworks Landscape Management Manual*, developed in 1989 by Andropogon Associates for the National Park Service. This was completed to provide an evaluation of then-current management practices and to provide recommendations for alternative management approaches. The parks emphasized in that study were four Virginia, Civil and Revolutionary War battlefield parks. The *Manual* provided guidelines for managing various vegetative cover types ranging from forest to native tall grasses, and for stabilization and revegetation of damaged ground surfaces through various methods, including bioengineering techniques. Some of the recommended practices have since been implemented or partially implemented with varying degrees of success. From its inception, the *Manual* was considered to be a first step in developing the art and science of earthworks landscape management. Some of the methods proposed in the *Manual* were considered experimental in nature, subject to evaluation and

re-evaluation over time, as well as refinement and revision as more experience and information is accumulated both from the management applications in the parks themselves and more generally from the growing body of literature on landscape management and restoration.

Guide to Sustainable Earthworks Management.

The current project represents the first such evaluation, refinement, and expansion of the 1989 *Earthworks Landscape Management Manual*. Begun in the summer of 1995 with field assessments of earthworks and earthworks management practices in seven parks in the Middle Atlantic and Southeastern states, the project has culminated in the development of the *Guide to Sustainable Earthworks Management*. The *Guide* includes specific information on managing earthworks in the two most typical conditions in which they are found: under forest cover and in open conditions. The *Guide* draws upon information we have learned since the last exploration; the basis for this new work is a clear management process that considers sustainability to be the foundation for preserving and interpreting these resources.

This current work has been completed by the NPS Northeast Region, NPS Southeast Region, and the NPS Battlefield Protection Program in partnership with the Georgia Trust for Historic Preservation. It draws upon the work of several professionals including Darrel Morrison, Professor of Landscape Architecture at the University of Georgia, Dr. James Johnson, Forester with Virginia Polytechnic Institute and State University, Paul Hawke, Historian, Shiloh National Military Park, David Lowe, Historian, National Park Service, and Allen Cooper, Archeologist, National Park Service. It has also been informed by current earthworks management philosophies in the seven parks that are the focus of this study: Colonial NHP, Fredericksburg NMP, Kennesaw Mountain NBP, Ninety Six NHS, Petersburg NB, Richmond NBP, and Stones River NB. Chapter One, written by Paul Hawke, provides an historical context for American earthworks associated for the most part with the Revolutionary and Civil Wars. This chapter includes a concise history of these structures as well as a discussion of their significance along with images illustrating the historic and current appearance of typical earthworks. A glossary of terms, identifying the various types of earthworks, with written and graphic portrayals of characteristic earthwork forms, is included as Technical Support Topic #1 in chapter seven. Chapter Two expands on three central principles of earthworks management. Chapters

Three and Four provide concise information about applying these principles to managing earthworks under forest cover and in open conditions. Chapter Five defines a step by step process for earthworks management and Chapter Six provides sample management strategies ranging from establishing a long term native grass cover to enhancing legibility of earthworks for interpretation. Chapter Seven contains a series of technical support topics including such topics as a glossary of earthworks terms and a list of nurseries that supply native seeds. The purpose of this chapter is to provide field-specific information on managing earthworks; additional technical support topics will be developed. The *Guide* appendices contain critical information on the methodology for this project, the evaluation of the *Earthworks Landscape Management Manual*, and a copy of the *Earthworks Landscape Management Manual*.

The *Guide to Sustainable Earthworks Management* is intended to be a living document that is revised and expanded as more data is collected on successful earthworks management strategies.