Chapter 2
Historical GIS as a Platform for Public Memory at Mammoth Cave National Park

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ABSTRACT

The Mammoth Cave Historical GIS (MCHGIS) fosters new understandings of a national park landscape as a historic farming community and offers a web-based platform for public memory of pre-park inhabitants. It maps the 1920 manuscript census at the household level over a streaming topographic map and georeferences Civilian Conservation Corps photographs of dwellings for visualization and analysis of the area's population on the eve of creation of Mammoth Cave National Park. A web interface to the MCHGIS permits broader dissemination of archival holdings. Public participation GIS techniques are adapted to initiate a virtual site of public memory to supplement the history presented by institutionally-held materials with those donated from private holdings.

INTRODUCTION

GIS has proven a valuable tool for historical geographers in facilitating integration of data from diverse sources, permitting visualization and analysis of past places, and allowing dissemination via the Internet of both digital databases and the tools to explore them (Gregory & Healey, 2007). This article describes a historical GIS created to document and enhance understanding of the history of the pre-park inhabitants of Mammoth Cave National Park (Figure 1). The national park was authorized by U.S. Congress in 1926, the same year as Great Smoky Mountains and Shenandoah National Parks, part of a wave of park-creation intended to meet the recreational and psychologi-

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Figure 1. Mammoth Cave National Park is located in the karst region of central Kentucky and is easily accessible from Interstate 65, a modern roadway that roughly follows the route of the old Dixie Highway of the 1920s.

cal needs for wilderness among the core of U.S. population located east of the Mississippi River (Ise, 1961). All three new parks had resident populations, variables mixes of EuroAmericans, African Americans and Native Americans. The Mammoth Cave region had, by far, the highest population density of the three new parks, yet it has received the least scholarly treatment of its displaced population.[1] As a first step in addressing this lacuna, the Mammoth Cave Historical GIS (MCHGIS) provides a snapshot of the region's habitation on the eve of the national park's creation. It combines 1920 manuscript census data for individual households with photographs of the dwellings where families lived, geolocating both to known house sites. It thus provides not only the basis for quantitative analysis of the pre-park population, but a framework for qualitative understanding of landscape and living conditions in the region.

A number of GIS map populations at the household level for small cities or portions of larger urban areas (see, for example, DeBats, 2008; Schlichting & Tuckel, 2006). Historical GIS at the individual or household level for rural areas in the U.S. are rare because rural street addressing was not standardized until recently, and many rural areas lack alternative data sets, such as city directories, tax lists, or utility records, that help locate urban populations. DeBat's (2009) GIS for rural Washington County, Oregon, used federal plat maps created under the aegis of the Donation Land Claim Act, a data set unique to the Oregon Territory. Thomas and Ayers' (2003) Valley of the Shadow project, investigating the impacts of slavery at the time of the Civil War, created a detailed GIS of one Northern and one Southern county from census and military service records, letters, and newspaper articles. The web site for this project, however, presents only static maps.

The MCHGIS is methodologically innovative in its use of qualitative techniques to map census data for an entire rural community at the household level and for its creation of an interactive web interface that allows users to explore the GIS. A detailed topographic map prepared in 1930 as part of the land acquisition process in the Mammoth