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.

Keywords: Historical GIS, Kentucky, Mammoth Cave, National Parks, Public Memory, Public Participation GIS, Virtual Community Building

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 psychological 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 address-

¹ DOI: 10.4018/jagr.2011100102
ing 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 Cave region showed house locations, but the Park retained no information on who lived in each house. The authors developed a three-prong approach to matching census households with known house sites, comparing head-of-household house ownership data from the census with national park parcel purchase records, relying on local knowledge of key informants, and interpolating between existing matches based on the presumed path of the census taker.

The MCHGIS is also innovative in its adoption of techniques from web-based public participation GIS (PPGIS) to foster a collaborative site of public memory for the pre-park population of the Mammoth Cave region. Users may interact with the MCHGIS through an easy-to-use web GIS interface, viewing house and parcel layers overlaid on a hill shaded topographic map. Clicking on a house site brings up the 1920 census data for that household where a match is known, as well as any photographs of family members, the dwelling or farm outbuildings in the GIS. Layers are fully searchable to assist in the location of family names. Members of the public are encouraged to submit additional photographs and other historic information for inclusion in the MCHGIS.

The goals of this paper are to demonstrate the utility of historical GIS in achieving new understandings of a national park landscape, document the progress to date of the MCHGIS in creating a geospatial database of the pre-park population and a platform for dissemination of pre-park history, and describe the creation of a geospatial framework for public memory through a participatory collaboration with former park residents and their descendents.

**TOWARDS A NEW UNDERSTANDING OF A NATIONAL PARK LANDSCAPE**

Individual U.S. national parks have varied in the policies applied to resident populations at the time of park creation and in their subsequent approaches to interpretation of cultural landscapes within their borders. Yellowstone National Park, created in 1872 as the first U.S. National Park, established the model of national park as uninhabited wilderness, yet the delineation of its boundaries antecedent to European American settlement was the exception rather than the rule (Dilsaver & Wyckoff, 2005). When Glacier National Park was created in 1910, sixteen years before the Eastern trio of Great
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