A Gazetteer of Archaeological Sites and Cultural Resource Surveys Surrounding the Big Thicket National Preserve

Journal of GIS in Archaeology, Volume I

ESRI 380 New York St., Redlands, CA 92373-8100, USA • TEL 909-793-2853 • FAX 909-793-5953 • E-MAIL info@esri.com • WEB www.esri.com

J-9078

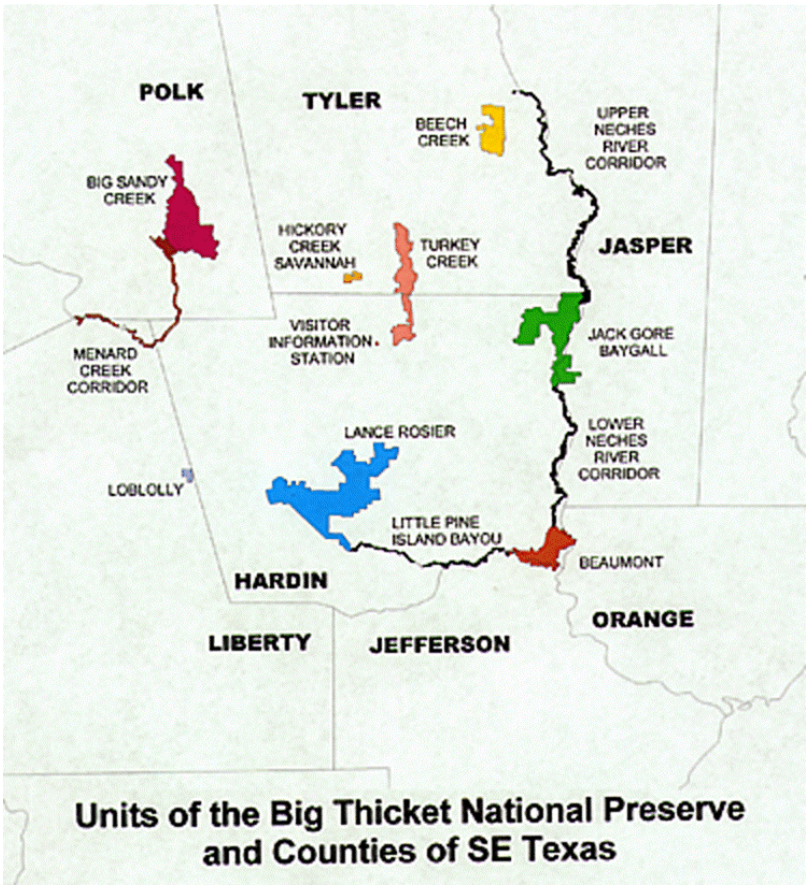
A Gazetteer of Archaeological Sites and Cultural Resource Surveys Surrounding the Big Thicket National Preserve

J. Thomas Dureka and Roger G. Moore
Moore Archeological Consulting, Houston, Texas

The bayous run slow and the land lies low in the steamy swamplands of the Trinity River basin in southeast Texas. Most westward-moving historical settlers chose to go around the dense, spooky forests and wetlands of the Big Thicket region, but it made a nearly impenetrable hideout for fugitives from the law or the army. Prehistoric mussel-eaters, bear hunters, moonshiners, Civil War deserters, smugglers, tall timbermen, and oil wildcatters have all added their own ghosts to the rich lore surrounding the Big Thicket.

In the 1970s and 80s, the United States Department of the Interior's National Park Service (NPS) began acquiring and managing a series of properties in the Big Thicket region for their incredible ecological diversity.

Figure 1
Big Thicket Gazetteer Project Area



The NPS has more recently sought to understand and promote the prehistoric and historic heritage of the Big Thicket National Preserve (BTNP) by weaving all available archaeological and historical data into a cultural landscape model. To help construct the basis for this model, Moore Archeological Consulting (MAC) prepared a gazetteer depicting and summarizing all publicly available archaeological data within a two-mile area surrounding the BTNP, collected from archives at the Texas Historical Commission (THC-Austin), the Texas Archeological Research Laboratory (TARL, Austin), NPS files (Beaumont, Texas), and the MAC Library (Houston).

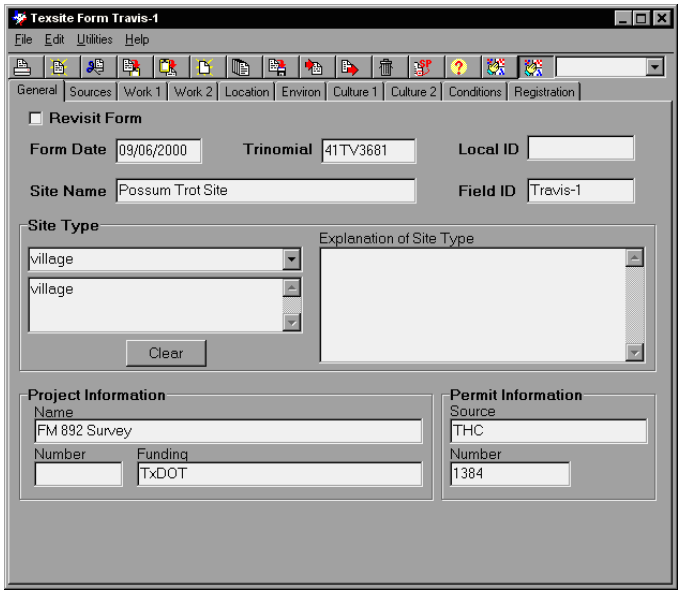
This unusual compilation is a multimedia reference source involving both manual and digital products (including an ArcView project pinpointing site centroids). Report extracts for 63 cultural resource surveys were compiled and assembled into an ArcView database. The extracts included (wherever feasible) the title page, abstract or introduction to the report, the project area map, and the site numbers of any sites located. Each project extract was fronted by a summary page for ease of use. All of the projects were keyed by number to a project bibliography. Project areas were then plotted on 35

7.5-minute USGS topographic quadrangle maps (but not digitized) and again keyed by number to the bibliography and report extracts. Formal recordings for 91 archaeological sites were completed from archival sources, especially from the surveys conducted by Henry C. Dethloff and Victor H. Treat, professors of history at Texas A & M University prior to preserve acquisition in the 1970s. Some other sites have not been revisited in more than 50 years.

The immediate resource management utility of the gazetteer is an additional contribution to the administration of the preserve. The BTNP is in an unusual position for a national park unit in that, when the land was acquired, preexisting minerals rights and leases were not surrendered. The NPS is thus obligated to permit oil and gas exploration within the preserve. The preserve managers are charged with minimizing the impact of these exploration activities upon the natural and cultural resources of the preserve. The gazetteer provides the preserve managers with easily accessible information as to whether a particular proposed oil and gas project area has been previously surveyed, as well as whether there are any known cultural resource sites at that locality.

The data collected, moreover, has greatly assisted in refining site locational predictive modeling efforts for the preserve. The quality and kinds of data (especially geographic data) collected by site recorders over the last several decades varied tremendously. Very few of the site recordings included maps of the site areas or estimates of site dimensions. None of the sites recorded to date have been plotted with a global positioning system (GPS). Until the late 1980s, most researchers were required to use 15' USGS quadrangle maps or county highway maps to plot sites and projects in and around the BTNP. However, site recording standards have tightened up considerably in Texas in recent years. Site recordings submitted to TARL for official registration and curation must now include a digital version of the site form in TexSite, the relational database program developed by staff at the Texas Historical Commission to collect and store site data.

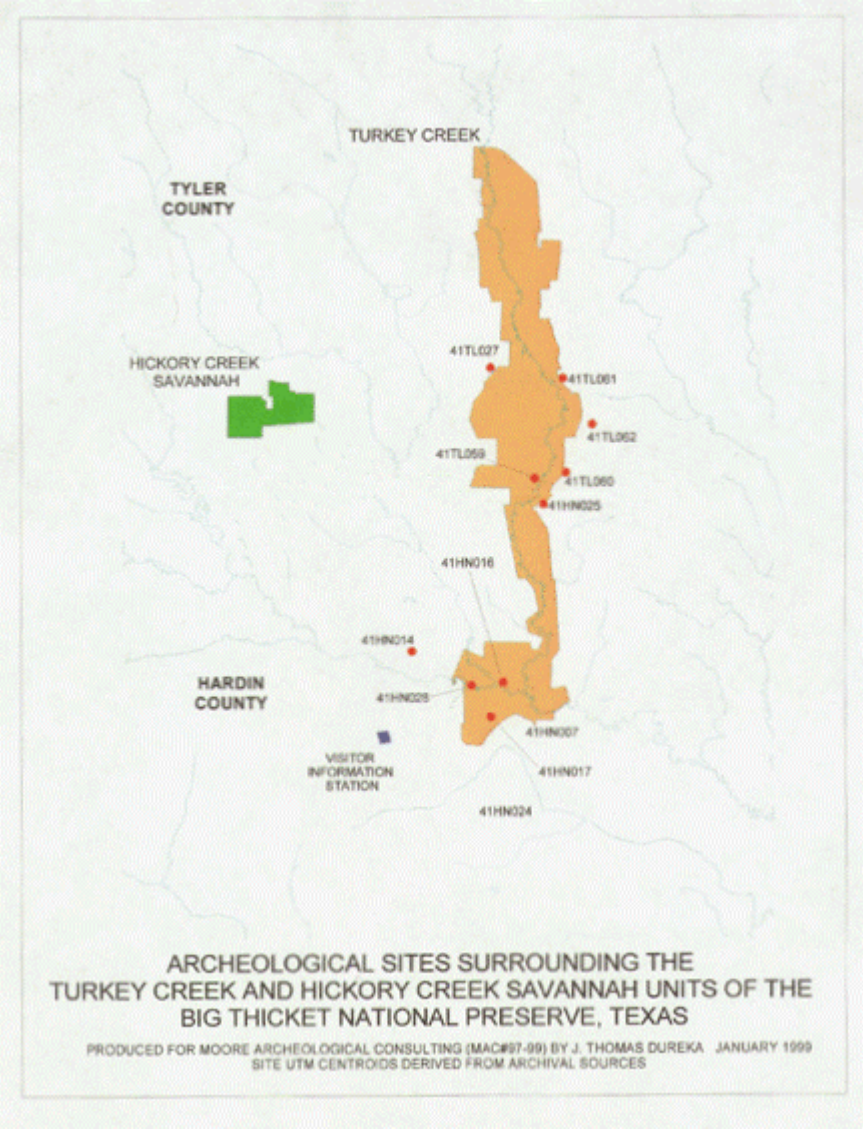
Figure 2
TexSite Data Entry Form



This user-friendly program arranges and compacts data into a .dbf file that can be added as a table to an ArcView project. This file contains several dozen fields including UTM easting and northing coordinates. (The database, labeled "tex.dbf", will be found in the Data Folder of the TexSite Program File.)

Using shapefiles of unit boundaries, hydrology, roads, oil wells, and other coverages for the preserve, graciously provided by BTNP staff, MAC created an ArcView project with separate Views of individual units of the preserve. After adding the tex.dbf table to the Views, an Event Theme was then added by selecting View-->Add Event Theme. Where prompted by the dialog box, "Easting" was selected for the *x* coordinate, and "Northing" for the *y* coordinate. This automatically added the Event Theme to the View's Table of Contents. When the Theme was activated, the UTM coordinates of the site centers were displayed on top of the other themes. (False coordinates were used for this article to protect the sites from looting.)

Figure 3
Sample Event Theme Output of TexSite Database in ArcView Gazetteer



If only site locations need to be displayed on a map (rather than the actual shape and dimensions of the occupation), ArcView software's Add Event Theme feature has proven useful for automating plottings from databases created in TexSite. Other states' cultural resource management agencies may have created archaeological site data collection programs that can likewise take advantage of ArcView for accurate, high-impact display of site location data.

Dr. Roger Moore, principal investigator for the project, may be reached at 713-861-8663 or caverarch@aol.com. Tom Dureka directed the research and GIS efforts for the

project; he can be reached at 512-360-3045 or akamai@onr.com. Many thanks to Dr. Dan Julien, director of the Texas Historic Sites Atlas and TexSite administrator for the State (512-463-7199). The generous support of the staff at the Big Thicket National Preserve is likewise greatly appreciated.