Reassessing The Cultural Landscape Of St. John, Danish West Indies (U.S.V.I.), Using GIS
Abstract

Recent studies of the East End community and the small beachhead settlement at Cinnamon Bay indicate the need to reevaluate historic sites and preservation planning on St. John, U.S.V.I. This study examines recent findings and presents a plan for a comprehensive GIS (Geographic Information System) survey utilizing rich archival data in combination with GPS (Global Position Survey) techniques to map the cultural landscape and explore changing patterns in land use. In particular, this study will go beyond simply recording the largest and most obvious sugar estates and attempt to identify the full range of living settings including small scale settlements, free holdings, and post-emancipation in-holdings.

Introduction

The island of St. John, United States Virgin Islands (formerly the Danish West Indies), presents an excellent opportunity to use advances in technology and knowledge of archival sources to compile archaeological and historical data in a unified Geographic Information System (GIS). This study describes a project, initiated during the summer of 2003, that uses GIS to reconstruct the island’s cultural landscape from the beginning of the historic period to 1917 (when the Danish Islands were transferred to the United States) (Figure 1).

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The GIS will produce a body of data that will be useful in answering an array of research questions and for strategic preservation planning (Church et al 2000). For instance, we plan on using the data to answer thematic questions pertaining to in-holdings, common lands associated with transitions to freedom among the island’s Afro-Creole population. However, once created, the data and spatially integrated maps will provide information on the spectrum of historic sites from large sugar estates, to bay rum factories, cotton estates, lime works, and provision grounds as well as the demographic patterns of the people who were in residence on these properties, and the buildings and features that they constructed. The spatially oriented data base should assist resource managers in protecting resources representing the breadth of historic sites on the island (Farley et al 1990; Ebert 2000).

The advantages of carrying out a whole island archaeological and historical GIS on St. John include (see Kvame 1995):

1. Excellent, but previously untapped, archival resources.
2. The preservation of a significant portion of the island in the Virgin Islands National Park.
3. The general preservation of sites throughout the island linked with a relatively small island population through much of the 20th century (until the rapid expansion of tourism and settlement beginning in the 1970s).
4. The fact that nearly all sites are easily defined on the surface using standard walking survey technique (Figure 2).
5. Progressive resource managers who would like to expand and enhance the information in the islands archaeological site inventories to make these data more useful in preservation planning. Ken Wild (NPS, Archaeologist for the Virgin Islands National Park, has built the construction of this type of data base into the Park’s planning and has already begun the process of carrying out GPS surveys of known ruins within the park. David Brewer (Territorial Archaeologist, with the Department of Natural Resources and Planning - SHPO) has provided us with encouragement in the initial planning phases.
Unfortunately, from a site preservation standpoint, the island is undergoing a rapid increase in population and historic sites are being destroyed and unnecessarily compromised. This destruction is caused in part by a lack of understanding of the diversity represented in historic land use on the island. In particular, archaeological site protection has been focused on the large scale sugar works from the larger sugar estates that once dominated the colonial economy of the island. These sites stand out on the landscape and their dominant physical presence assists in making a case for their preservation (Figure 2).

This study is being initiated because recent historical and archaeological research has demonstrated the need to rethink assumptions regarding land use and cultural practice on the island (Knight 2001, 1999; Armstrong 2003a and b, 2001; Armstrong, Knight and Hauser 2004). Since emancipation in 1848 through the transfer to the United States in 1917, the definitive trend in land use on St. John has involved smaller scale provisioning estates and a mix of small scale parcels along with the larger cotton and sugar estates (nearly all of which ceased operations after the earthquake of 1867).

Over the past eight years we have found that each time we carried out a focused research project the results indicated a pattern of land use and cultural activities that was far more complex and diverse than projected by standard histories and earlier site reports (particularly National Register nominations - which focused the main ruins of sugar estates) and island wide site surveys (which attempted to record the location of sites across the island but which were done from a mind set that defined significance in terms of massive architecture - or simply - large scale sugar estates).

Two recently completed archaeological and historical studies demonstrate a problem in the breaches in the net of site protection. First, the East End community: In the early 1980s, when archaeologists carried out a formal survey of St. John, they made their way to the rugged East End, walked a trail, found a few dispersed structures and concluded that the hills above Hansen Bay contained no significant historic sites (Ashermann et. al. 1981). In contrast, archaeological investigations by Syracuse University in the late 1990s in this same area, making use of detailed archival data and with the assistance of local informants, defined a vibrant Creole, free black, community with almost 50 house sites and associated features occupied by an average of 115 people (Figure 3). These sites are located within a large tract of communally held lands. Without the aid of detailed historical source material or local informants the earlier survey found no sites of significance, since what they saw did not conform to expectations of structures associated with the massive earthworks of sugar estates and they simply did not conceive of the significance of what they encountered. Having completed the East End study we now see similar “free settlements” in the St. Johnian landscape at places like the west side of Coral Bay, Browns Bay and on stretches along the south coast of the island. Moreover, using archival data we will be able to identify the disbursed in-holdings upon which provision farms were initiated after emancipation.

Second, Cinnamon Bay: Even the landscape of the larger sugar estates need to be rethought with a more comprehensive use and view of history. Recent archaeological studies along the shoreline at Cinnamon Bay show that the property defined as a single estate in National Register documents, was once three estates and that a previously unknown cotton and provisioning settlement was present on the property prior to formal Danish colonization, from at least 1680 (Armstrong, Knight, and Hauser 2004).

The project will utilizes base map GIS resources of the Eastern Caribbean Studies Program of the University of the West Indies and site file data from both the NPS and the DPNR (of particular value are GPS site files that have been and continue to be expanded by NPS archaeologist Kenneth Wild). This archaeological GIS involves compiling archival and field survey data in Access™ and integrating these data into a uniform island wide site file using ArcInfo™ (ESRI) spatial mapping
programs (Kvame 1988).

It emphasizes the integration of detailed archaeological records from the Danish Archives (Rigsarkivet and National Library) as well as the library of congress – particularly tax record (matricels and land lists) and census records and special free-black lists and lists of “unfree” persons – all of which link people to places... we just need to define where these sites are. Copies of these archival resources have been compiled over the past decade by David Knight and David Knight and Lollie Prime (Virgin Islands Historical and Genealogical Research Center). We will plot them using a base map transcribed from Peter Oxholm's maps of the island, dated 1780 and 1799 and correct for smaller estates not plotted by Oxholm but recorded in the tax records (about a 20% error) (Figure 4). We will then move backwards and forwards in time creating a series of overlay maps that will be ground truthed using GPS surveys to refine location and minimal sampling to refine locations and chronology.

In our studies we consistently found that the availability of archival sources and the quality of data generated by survey exceeded expectations and radically altered historical and cultural interpretation on a localized scale. Given the relatively small size of the island, the quality of the archival records, relative site integrity, and the demonstrated need to rethink historic land use in order to better understand the history of the island and an island wide archaeological and historical GIS will provide a more complete source of data on the cultural landscape of St. John that will assist in the identification and protection of the full spectrum of historic sites on the island. We see this GIS as an excellent means of putting forward our research interests while assisting in the preservation of the full spectrum of historic sites on the island.

References
Armstrong, Douglas V., David W. Knight and Mark M. Hauser 2004 Historical Archaeology of the Cinnamon Bay Shoreline, St. John, United States Virgin Islands: Explorations of a Small Cotton Estate and its Transformation in an Emerging Danish Sugar Economy. Syracuse University Archaeological Research Center Report..
Farley, J. A. W. F., Limp, and J. Lockhart

Knight, David W.

Kvame, K.


Figure 1: Location of St John
Figure 2: Archaeological Survey: Structures and materials are visible on the surface.

Changing Cultural Landscape

Pre-1810

1810 - 1848

1848 - 1870

1870 - 1917

Figure 3: Transformations on East End
Figure 4: Oxholm map used in locating sites (1780 Rigsarkivet, Copenhagen)
Figure 5: Structures and middens associated with the early shoreline estate