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Anthropology, Archaeology and GIS

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Introduction

Anthropology and archaeology are disciplines that collect and use geospatial data. The field of Archaeology in particular is now quite advanced in its use of GIS-related technologies (satellite data, GPS units, GIS mapping and spatial analysis). Examples of these applications are found in the annotated bibliography below and through the various suggested web-links. Anthropology has been slower to adopt GIS but applications are beginning to appear.

Publications

The field of anthropology/archaeology has seen a number of key publications focusing on GIS development and application. Some of these publications are listed below (those books marked with an asterisk (*) are available from Stephen Matthews or are housed in the GIA Offices on 8th floor of Oswald Tower).

Key Texts

K. Allen, S. Green & E. Zubrow (Eds).1990.
Interpreting Space: GIS and Archaeology
Taylor & Francis: London.
Over 30 essays present theoretical, methodological, and practical aspects and case studies of using geographic information systems to study human development within the landscape in the fields of archaeology and anthropology. They describe computer spatial information processing for researchers and workers, and provide information by which to evaluate, purchase, and apply the systems available. The overall sections cover theory and methodology, data sources, hardware and software, and applications.

M. Aldenderfer and H.D.G. Maschner (Eds). 1996. *
Anthropology, Space, and Geographic Information Systems
Oxford University Press: Oxford, UK.
The book is divided into sections demonstrating applications in cultural anthropology, archaeology, paleoanthropology and physical anthropology and includes chapters on: Land degradation in Peruvian Amazon; Settlement patterns in the Pacific Northwest; Ethnic distribution within the Los Angeles garment industry; Prehistoric sociopolitical development among the Northern Anasazi; Late-Horizon settlement patterns in the Teotihuacan-Temascalapa (Aztec Basin).

A.K. Knowles. 2002. *
Past Time, Past Place: GIS for History
ESRI Press (2002)
This is a well-put together book in which "scholars explain how they have used GIS to organize historical research, explore evidence in new ways, map past places and events, and challenge long-standing historical interpretations." It includes chapters on the Salem witch trials (see http://fisher.lib.virginia.edu/projects/salem), Causes of the Dust Bowl, Civil War battlefields, Mapping the ancient world, Immigration in New York 1900-2000, Redlining in

Philadelphia, Agricultural history, Mapping British population history, and the Electronic Cultural Atlas Initiative (see http://www.ecai.org).

Other publications

V.L. Gaffney and Z. Stancic. 1996.
GIS Approaches to Regional Analysis: A Case Study of the Island of Hvar
David Brown Book: Oakville, CT, USA.
See website http://www.archaeology.usyd.edu.au/VISTA/gaffney_stancic/

M. Gillings, D. Mattingly & J. van Dalen (Eds.) 1999.
Geographical Information Systems and Landscape Archaeology
Oxbow Books: Oakville, CT. USA.
Twelve papers discuss aspects of the application of GIS in archaeological contexts. There are papers on theory, reports on case-studies and discussion of progress in the development of new techniques and approaches.

K. Wescott, R.J. Brandon & K. Westcott (Eds.) 2000.
Practical Applications of GIS for Archaeologists: A Predictive Modeling Toolkit
Taylor and Francis: London.
Containing a free integrated CDROM, this book focuses on GIS use in predicting archaeological site locations.

D. Wheatley and M. Gillings. 2002.
Spatial Technology and Archaeology
Taylor & Francis: London.
A new publication providing a general guide to GIS and its various applications, written specifically for archaeologists.

Useful Websites

A useful website is maintained by the department of Archeology at the University of Sydney, Australia. http://www.archaeology.usyd.edu.au/resources/index.html. This site includes links to archeologists using GIS, research projects (such as the Electronic Cultural Atlas initiative, TimeMap project), and an annotated bibliography for GIS in archeology containing 300+ pre-1995 references.

Penn State Department of Anthropology

A number of Anthropology faculty have interest in GIS and related technologies, especially within the Archaeology program (see http://anthro.psu.edu/crculm/archaeology.html). Archaeologists at Penn State using GIS technologies include but are not limited to Dr. Dean Snow, Dr. George Milner, and Dr. David Webster. Others in the department have teamed up with the GIA Core staff to help in their fieldwork and other stages of their research. These include the use of GPS to assist in fieldwork operations in Bangladesh by Dr. Pat Johnson, the development of geospatial databases and application of geostatistical analysis for Dr. Jim Wood and colleagues in a study of Black Death in Europe, and the integration of spatial and network data gathered during fieldwork in Mexico by Dr. Jeff Cohen.