

VIEWING THE FUTURE IN THE PAST

Historical Ecology Applications
to Environmental Issues



EDITED BY

H. Thomas Foster II, Lisa M. Paciulli, and David J. Goldstein

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"The book's historic approach to environmental management brings new ideas about how to evaluate the sustainability of forestry and agriculture, how to measure biodiversity across time and space, the necessity for history in assessing resilience, and much more. Knowledge of long-term ecological impacts offers important new tools for durable conservation."

Carole Crumley | Uppsala University, Sweden

"This is an excellent series of studies demonstrating the relevance of archaeology and historical ecology for achieving a better understanding of the modern world. How humans responded to as well as shaped environmental changes in the past, the papers in this volume show, offers lessons as well as tools for dealing with the dramatic changes that our species will be confronting in the future."

David G. Anderson | University of Tennessee

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Reviewed by Michael Brent Lansdell, Illinois State Archaeological Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign.

Viewing the Future in the Past offers a set of archaeological and historical anthropological essays that explore ecological processes over a wide range of topics and geographical areas. This approach provides a diverse set of case studies that, though not all-encompassing, provides a basic concept to the reader of the “mosaic effect” that humans have on the environment in both the prehistoric past, recent past, and present day. The “mosaic effect” refers to the varied effects that human occupations have had on biodiversity and the landscape around the globe based on a number of factors, including population size, subsistence and settlement patterns, and economic pursuits. This book ultimately offers hope for the future in addressing ecological concerns by pointing out where this approach to understanding agent based ecological choices can be applied to modern problems in some cases, and offers answers to complex problems related to our environment.

The book is comprised of eleven case studies all approaching various anthropological or archaeological questions from a historical ecological approach. If there is one criticism of the book, it is that there is no introductory chapter explaining the historiography of historical ecology as a theoretical framework, which, in my opinion, would make the volume stronger. The first essay, written by the editors of the book, provides a basic introduction to the volume with its parameters and goals, but also serves as the first case study. All of the essays make good use of data consisting of a wide variety of sources. The data sources utilized in the essays range from primary historical data, tradition archaeological data sets (ethnobotanical, settlement studies, geomorphology), regional ecological data sets, to historical anthropology and ethnography.

The essays in the book also show the relevance of the approach by including a number of regions from around the world. The essays utilize data from the eastern United States, Great Plains, Pacific Northwest, Southwest, Central Mexico, and farther afield in Mesopotamia, Madagascar, and France. This wide range of topics and regions not only serves to highlight the relevance of historical ecology to investigations around the world, but also provides insights to new avenues for research to archaeologist for understanding the ecological role that humans play in their particular environment. As the editors and the general theme of the essays suggests, these types of investigations are relevant in the modern world as we come to grips with the effects that humans are having on the global environment.

Though all of the essays are worthy of praise in some form or fashion, I will not belabor the point that this is a good collection of research by combing over every essay in detail. However, it is worth mentioning the topics and approaches of the essays while noting particularly insightful ones. The first essay by the editors provides good use of primary historical data from the 19th and 20th centuries. First, by analyzing survey data and marker trees from the southeast U.S. they analyze the effects on biodiversity of indigenous peoples on the landscape. The essay then uses satellite data to address preserving biodiversity in Madagascar by studying habitat loss and strategies for mitigating that loss. These data seem to be an introduction to the last essay, which covers the southeastern United States and prehistoric biodiversity in more detail. Foster's essay explores more in-depth the effects of managed landscapes using witness tree data on known archaeological sites and a comparison of biodiversity based on chronological distance. In these results, biodiversity was greatest around the most recent occupations, indicating that indigenous peoples had a tremendous effect on their local ecology.

The remainder of the essays can be broken down into two broad topics; the ecology of food production and maintenance on biodiversity, and the use of landscape and place. Though in many ways these topics often go hand in hand, they each approach their research from a different vantage point. The majority of the essays touch on the first topic and include a variety of different approaches. Morehart's research analyzes evidence of standardization in maize production in Postclassical Central Mexico. His case study looks at changing biodiversity of maize and contrasts that with political, economic, and social conditions in the settlements. Whitney's essay offers a historical ecological twist to predictive modeling with the development of a complex of layers of caloric availability for a large geographical area, in this case the Georgia coast. He demonstrates how this can be another tool in predictive modeling in new areas by applying his layers of data to known archaeological sites in his study area. Bocinsky and Kohler use an innovative approach to modeling data by developing an agent-based simulation model informed by a variety of data sets to test outcomes against the archaeological data. Their simulations provide evidence that turkey domestication in response to ecological pressures led to feedback loop that only served to worsen the resilience and sustainability crisis in the 12th century southwest. Quick's article offers an ethnography of Anson Mills, a company competing in the global market place, and its role in providing a sustainable future for farmers while harkening back to the past pre-Colonial and plantation uses of common grains.

The landscape and place essays make up the remainder of the book. Hritz and Pournelle examine the landscape of agricultural practices in the third millennium BCE in Mesopotamia. This research explores the use of agriculture in microbiomes of the riverine environments in the region at a time of increased urbanization and how human agents attempted to maintain the local conditions that gave rise the two processes (agriculture and urbanization) in the first place. Spielmann et al. explore agricultural viability of soils in a marginal environment of Perry Mesa in Arizona that saw and increase in utilization during the 12th and 13th centuries. Human occupation expanded into these marginal areas during a time of increased precipitation, but as

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these levels declined, the soils in these areas became less manageable for large-scale agriculture despite human attempts to mitigate the negative returns. Brock explores the roots of reforestation in industrial tree farming in the Pacific Northwest. This essay documents the efforts of industrial loggers to restore an economic timber commodity after initial extraction. She points out that understanding the goals of this type of reforestation is important even though it differs from those of more recent environmental concerns with biodiversity. Braun's essay places people back in to the landscape and explores how subsistence practices and large-scale economic processes effect a landscape generally viewed as resilient and sustainable. In this he points out the discontinuity of economic pursuits that seek to maximize output above all else, especially sustainability, in marginal environments. Finally, Tinkner's essay explores the changing roles of gardens and artificial ponds in France mainly over the last 200 hundred years. She points out that the uses and purposes of certain places on the landscapes changes with the social and political views of the times.

This volume offers a broad look at the types of topics and questions that can be addressed within a historical ecological framework. More importantly, the types of research offered here can be viewed within the milieu of our current environmental and ecological crisis and can be applied to understanding how to address these modern problems. From an archaeological or anthropological standpoint, these essays for the most part are data driven and therefore offer all archaeologists novel ways within which to better understand their areas of interest. Though, we as archaeologists seem to be learning that applying one theoretical framework to our research is not always conducive to understanding the past, this book does offer insight into how we can better our understanding of the archaeological record and provide important data for recognizing and addressing modern problems. I would recommend this volume to other archaeologists as a way to expand how we talk about the past and how human historical trajectories shaped the past and ultimately shape the future.