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Five Case Studies

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More than 50 years have passed since the landmark excavations of Roberta Greenwood came to the attention of the archaeological community. *Foragers on America's Western Edge* attests to the enduring significance of the rich history of the Pecho Coast and will no doubt serve as an important resource for decades to come.



## ***Applied Zooarchaeology: Five Case Studies***

Steve Wolverton, Lisa Nagaoka, and Torben C. Rick  
Clinton Corners: Eliot Werner Publications, Inc., 2016,  
130 pp., ISBN 978-0-9898249-6-5, \$29.95 (paper).

### **Reviewed by Gabriel M. Sanchez**

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Increasingly, scientists, resource managers, and indigenous communities are recognizing the potential of the archaeological record to inform the conservation and management of fauna and flora. Undeniably, the evidence available for long-term human-environmental relationships through archaeological datasets renders these data invaluable for conservation science. However, the process of applying archaeological data to conservation biology, resource management, and restoration ecology is far from straightforward. *Applied Zooarchaeology* carefully considers these problems, provides solutions, and offers recommendations for applied archaeologists so that the implications of archaeological research can impact conservation science and policy. The book is an excellent primer for all fields of study and researchers at any level of their careers regarding the analysis of archaeological data to help guide the management of fauna.

Through a series of research projects that span the globe, Wolverton, Nagaoka, and Rick highlight the unique position of zooarchaeological data in defining the biogeography of fauna, ancient human impacts, and human-environmental relationships across broad spatial and temporal scales. While archaeologists are familiar with the role of archaeological data in investigating

## **REFERENCE**

- Greenwood, Roberta  
1972 9000 Years of Prehistory at Diablo Canyon, San Luis Obispo County, California. *San Luis Obispo County Archaeological Society Occasional Papers* 7. San Luis Obispo.

these issues, *Applied Zooarchaeology* provides excellent recommendations to assist archaeologists in navigating the political ecology of conservation practice and policy. Each case study considered offers an exceptional opportunity to identify problems and solutions in bridging the gap between archaeological science and ecology and biology. Through a series of case studies, the authors highlight the strengths and limitations of archaeological data, how to communicate archaeological data quality assessments to other scientists, the role of taphonomy in structuring faunal assemblages, and the methods available to assess preservation biases.

The case studies presented emphasize a diversity of issues in applied zooarchaeology, including organism biogeography, species range reductions, species translocation, discrepancies between contemporary and ancient organism size, among others. Each chapter includes a list of key terms and discussion questions, which makes *Applied Zooarchaeology* a useful teaching resource. In addition, individual chapters include a bibliography and a list of suggested readings, which makes *Applied Zooarchaeology* an excellent resource for both students and researchers looking to delve deeper into the study of applied archaeological science.

The introductory chapter provides a concise review of conservation biology, considers the role of spatial and temporal scales in resource management, as well as the political ecology of conservation science. The chapter provides recommendations for navigating diverse political ecological contexts and shows how archaeologists can approach and overcome concerns regarding data quality. Chapter 2 explores how archaeological data can help establish the ancient biogeography of organisms (with

an example involving freshwater mussels) while considering how taphonomic biases structure archaeological data. The authors synthesize research that explores how interspecific variability in the shell shape and density of freshwater mussels affects differential preservation; this structures the presence and absence of mussels in archaeological assemblages.

Chapter 3 considers historical North American sea otter (*Enhydra lutris*) extirpations and how archaeological data and ancient DNA analyses can help establish which modern sea otter populations might be ideal candidates for translocation and restoration efforts. Chapter 4 outlines restoration efforts directed toward conserving the California condor (*Gymnogyps californianus*), given significant condor range reduction by the mid-twentieth century. Synthesizing research on late Pleistocene and Holocene California condor remains, stable isotope analyses, and contemporary captive breeding and feeding programs, Wolverton, Nagaoka, and Rick highlight the role of archaeological data in debates on establishing the species range, Pleistocene extinctions, and Pleistocene rewilding. Chapter 5 also considers issues related to the translocation of species, and uses the example of the South Island takahe (*Porphyrio hochstetteri*) of New

Zealand to demonstrate how archaeological data can inform issues related to biogeography and to define suitable habitats for translocation. Chapter 6 considers the use of biometric data from archaeological and modern white-tailed deer (*Odocoileus virginianus*) in central Texas to inform contemporary deer herd management.

*Applied Zooarchaeology* is an excellent primer for anyone interested in conducting zooarchaeological research or understanding the applicability of archaeological data to conservation science. While the primary datasets employed in the book are derived from animal remains, the concepts discussed are applicable far beyond zooarchaeology and are especially relevant to paleoethnobotany. Throughout the book, the authors highlight the importance of establishing archaeological data quality and articulating archaeological data quality assessments to conservation scientists. Wolverton, Nagaoka, and Rick also stress the importance of disseminating research results outside of archaeology to both conservation scientists and the public. The authors convincingly illustrate, through the case studies presented, the value of archaeology in conservation science and the potential for significant archaeological contributions in these disciplines in the future.

