



NEW ZEALAND  
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## ARCHAEOLOGY IN NEW ZEALAND



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## REVIEW

**David W. Steadman 2006. *Extinction and Biogeography of Tropical Pacific Birds*. University of Chicago Press, Chicago IL. 480 pp., 108 half-tones, 133 line drawings. Cloth \$110.00: ISBN: 978-0-226-77141-0 Paper \$45.00 ISBN: 978-0-226-77142-7**

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David Steadman is the world's leading expert in extinct Pacific birds, having participated in countless excavations on over 60 islands and examined the bulk of the faunal assemblages (25,000+ bones) collected by archaeologists over the past twenty years. *Extinction and Biogeography of Tropical Pacific Birds* represents the magnum opus of a well documented career and contains personal anecdotes about the man himself. Of particular importance to prehistorians are many updated tables of avifauna from sites across the Pacific; data which was previously unavailable. While this book contains information that is of interest to archaeologists concerned with the impacts on pristine environments by colonizing groups of humans, it is written for ornithologists not for archaeologists, a fact for which Steadman does offer a few apologies.

Part I of the book is abundantly illustrated with maps of both major regions and archipelagos. Chapter One includes discussions of changing sea levels and corresponding climate change throughout the geological history of the region. Chapter Two discusses terrestrial vertebrates and plants and how the events outlined in Chapter One may have affected the communities of plants and animals on Pacific islands; their dispersal and relationships highlighted through several island/ archipelago specific examples. This is followed by a chapter outlining the settlement of the various regions of the Pacific and case studies highlighting the archaeological contexts from which many ancient and extinct bird remains have been recovered. The final chapter of the section deals with sources of information from modern field survey, to museum specimens to archaeological excavation. It is here that Steadman clearly illustrates that much work is yet to be done to understand both the modern and prehistoric distributions of Oceanic birds.

Part II of the book includes regional surveys of Melanesia, Polynesia and Micronesia and the information on birds both modern and prehistoric. Steadman highlights the relative paucity of data from Near Oceania due both to lack of fieldwork and unfavourable preservation conditions for animal bone.

He also emphasizes the need for more work in Micronesia and greater coverage for islands in Polynesia. This section contains a large volume of updated information and previously unpublished avian assemblages that will appeal to zoologically minded archaeologists. However, some may feel that more stratigraphic and contextual information would be useful for the application of these numbers to their own research.

Section III provides an in depth discussion of several important families of landbirds and gives the reader a rare glimpse into the rich avian world which Pacific peoples encountered when they reached pristine island environments. Steadman focuses his attention on landbirds which he feels are most important for the creation of biogeographic models. Only a single chapter is devoted to seabirds which suffered far fewer extinctions than landbirds and do not add the same level of information for model building, particularly in the face of endemic flightless varieties and human impacts.

Finally Section IV deals with dispersal, extinction, faunal attenuation in the unique environments represented by Pacific islands. Steadman uses the data detailed in sections II and III to discuss, criticize and rework theories about equilibrium and turnover, species-area relationships and community ecology. In Chapter 16, entitled Extinction, Steadman reintroduces his and Martin's ABC model of factors that effect extinction rates on islands. This is followed in Chapter 17 by a discussion of the difference a robust fossil record makes to understanding speciation and faunal attenuation; information unavailable to theorists in the past due to a lack of prehistoric data. Steadman suggests the use of a combination of morphological and molecular (DNA based) approaches to understand relationships between species and speciation events. In the chapter entitled Equilibrium and Turnover Steadman argues that many of the traditional biological models for colonization, equilibrium and turnover will need to be revised or reconsidered for Oceanic island communities. He believes that the fossil evidence shows that before human arrival there were long periods of faunal stability in the Pacific, not alternating periods of turnover and equilibrium. Chapter 19 examines theories around species-area relationships and again Steadman suggests that a new island specific model should be developed and further tested with more archaeological assemblages and field studies. Archaeologists will not be as much concerned with these theoretical chapters as will biologists and while Steadman does assert that these new models will require rigorous testing though the addition of more information, both ancient and modern, other theorists, namely Jared Diamond (2007), have expressed dissatisfaction with his new models and their underlying datasets.

This book is an important one for Oceanic zooarchaeology and Steadman should be commended for making available a range of datasets not previously published and for updating old data with the newest analyses. As Steadman says himself in the prologue he has ‘bared his bones’ and archaeologists will be very glad of it. However, while some of the new and updated data does include excellent stratigraphic information researchers will undoubtedly want that level of detail for all the prehistoric sites discussed for which Steadman was the analyst. In a subsequent edition perhaps this can be provided so that archaeologists can evaluate things such as cultural preferences for specific birds in the early colonisation periods or levels of dependence on domesticated animals through time. There are also several mentions of unpublished data, both modern and ancient. Researchers will be clamouring for this information both in archaeological and biological communities and again perhaps in a second edition this information could be incorporated in the text. Despite the lack of a few details that would be useful to the archaeologist, with the detailed maps, new and updated data and suggestions for avian conservation in the modern Pacific Steadman’s new volume certainly is an important addition to the Oceanic archaeologists’ bookshelf.

## References

- Diamond, J. 2007. Voices from Bird Bones. *Science*, 315(16 February 2007): 941–942.