

# Introduction: Archaeology and Historical Ecology in the Pacific Basin<sup>1</sup>

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IN RECENT YEARS, historical ecology has emerged as one of the most insightful and comprehensive approaches to understanding how humans have influenced and had an impact on the environment. Coupling the natural and social sciences, this interdisciplinary approach draws on paleoecology, archaeology, history, biology, and other disciplines. By integrating long-term analyses of climate change, prehistoric human settlement, historical interactions, and modern development and industrialism, historical ecology is an important paradigm for examining the natural and cultural phenomena that drive the evolution of island ecosystems.

In 1991, Patrick V. Kirch and Terry Hunt organized a session at the Pacific Science Congress in Honolulu focused on these issues in the Pacific islands. Their subsequent volume published in 1997 entitled *Historical Ecology in the Pacific Islands* (Yale University Press) set the foundation for exploring how this field of study could be applied in the Pacific with obvious and important implications for studying other islands and coastal areas worldwide. Several years ago, we discussed the prospect of marking the 10th anniversary of the volume's publication with a special session at the 2007 Pacific Science Congress in Okinawa. We were interested in revisiting how various interweaving and dynamic processes had structured island environments over the millennia and how historical ecology in the Pacific had developed over the last 10 years.

For the 2007 Pacific Science Congress session, we invited scholars from around the world to examine the importance of interdisciplinary and collaborative research for understanding human impacts and adaptations on islands in the Pacific and outer margins of Oceania. Although not all invitees were able to attend the congress, everyone asked to participate believed it was essential to have them published in a cohesive volume. After much discussion, we agreed that *Pacific Science*, as the leading journal for biological and physical sciences in the region, was the ideal venue to cover the broad and exciting array of historical ecological research being conducted by Pacific Rim archaeologists.

The papers presented here expand on earlier efforts within the region to integrate archaeology into various types of analyses that examine long-term changes to land- and seascapes. The papers in this issue highlight a wide range of associated topics: from biological invasions due to human translocation of animals (Matisoo-Smith et al.), changes in subsistence strategies (Allen and Craig), landscape modification through both natural and human processes (Torrence et al., Yamaguchi et al.), and sustainability of resources (Thomas, Hunt and Lipo) to ones that explore concepts embedded within behavioral ecology (Jones, Des Lauriers, Maschner et al., Erlandson et al., Summerhayes et al.).

As readers familiar with Kirch and Hunt's (1997) earlier volume will note, the current collection of papers is geographically expanded to include island groups along the west coast of North America, including the Aleutians, Channel Islands, and Cedros (Baja California). Given the long history of research in these areas and the great temporal span of human occupation reaching back to the Terminal Pleistocene/Early Holocene, they provide unique opportunities to explore the antiquity of human occupation on islands that are resource rich and relatively close to mainlands, in contrast to most Pacific islands.

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The papers in this issue demonstrate that the analysis of archaeological remains and their application to historical ecology has become increasingly sophisticated. For example, the application of techniques such as DNA and stable isotopes to studies of the ancient past has tremendously expanded our ability to track the movement of human groups, flora, and fauna and to gauge changes to the human diet as populations became more familiar with their environments. Coupled with continued advances in theoretical modeling, researchers are also setting the stage for establishing the relevance of archaeology to the broader scientific community. As historical ecology in the Pacific Rim continues to move forward in exciting new directions, it is clear that scholars working in this vast region will con-

tinue to pave the way in finding novel approaches to understanding the evolution of human behavior in island regions.

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