The Prehistory of Easter Island (Rapa Nui)
Towards an Interdisciplinary Integrative Framework

Editors: Valentí Rull, Christopher M. Stevenson

Contents

Introduction (Valentí Rull, Christopher M. Stevenson)

Part I. Transpacific voyaging and settlement

Southern Ocean climate influence on trans-eastern pacific voyaging and colonization of Easter Island (Ian D. Goodwin*, Stuart A. Browning)

Computer simulation of the ocean voyages required for the colonization of Rapa Nui (John Temmen, Alvaro Montenegro*, Valentí Rull)

Ahu Nau Nau re-visited: new perspectives on old problems at Anakena, Rapa Nui (Paul Wallin*, Helene Martinsson-Wallin)

Geological processes determining the human occupation of Rapa Nui (Alberto Sáez, Olga Margalef*, Santiago Giralt, Sergi Pla, Laura Becerril, Christian Herrera, James Goff)

Sweet potato in Easter Island: insights from a monographic study of the genus Ipomoea (Pablo Muñoz-Rodríguez*, Robert Scotland)

Appraisal of the origins and timing of Rapa Nui’s early settlement (Claudio Cristino*, Patricia Vargas)

Prehistoric genetic and cultural relationships between Easter Island and Tiwanaku (Bolivia, Titikaka Lake Altiplano) (Antonio Arnaiz*)

mtDNA from chickens and how this relates to human settlement of the Pacific (Jeremy Austin*)

Part II. The ancient Rapanui culture

An assessment of refuge caves (ana kionga) on Rapa Nui (Christopher M. Stevenson*, Juan G. Borrega, José M. Ramírez)

Vinapu area revisited (Helene Martinsson-Wallin*)

Crematoria and cremations in Rapa Nui traditional society (Helene Martinsson-Wallin*)

Health and diet of ancient Easter Islanders: contribution from bioarchaeology (Caroline Polet*)

Undelivered moai or unidentified monument? (Nicolas Cauwe*, Morgan De Dapper)

Reconstructions and condemnations of cult platforms (Nicolas Cauwe*)
Palms for the archaeologist (David W. Ingersoll*, Kathleen B. Ingersoll)

Rano Raraku quarry excavations (Jo Anne Van Tilburg*, Mads Ravn, Casey R. Barrier, Alice Horn)

Microstratigraphy in Rano Raraku: implications for slope development and site formation in the moai quarry (Sarah C. Sherwood, Jo Anne Van Tilburg*)

History intrinsic in Rapanui and Māori cultural traditions, and the revitalization of waka horua (canoe voyaging) and traditional celestial navigation (Kate Souness* et al.)

Geological origin and geomorphology of the Rano Raraku landform – providing context for human land use and archaeological study (Richard K. Dunn*)

The influence of climate, lava weathering and rock gardens on Easter island’s rock-derived soil nutrients (Oliver Chadwick*, Nina Bringham, Cedric Puleston, Thegn Ladefoged, Peter Vitousek, Sonia Haoa, Christopher M. Stevenson)

Pollen, phytolith, and starch evidence for agricultural plants on Rapa Nui (Linda S. Cummings*)

Part III. Climatic and environmental change

Prehistoric paleoecology of Easter Island (Valentí Rull*)

Climatology of Rapa Nui (Isla de Pascua, Easter Island) Chile (Raymond S. Bradley*, Henry F. Diaz, William J. D’Andrea, Liang Ning)

Changing environment and the socio-ecological evolution of Easter Island (David A. Sear*, Melinda Allen, Pete Langdon, Alex Morrison, Justin Sheffield, John Dearing)

Easter Island past hydrological balance as inferred from Rano Aroi pound record: clarifying the role of the ENSO phases (Bruno Malaizé*, Thierry Delcroix, Anne-Marie Sémah, Thibaut Caley, Isabelle Billy, Michel Orliac, Sonia Haoa Cardinali, Christine Hatté, Rodrigo Abarca del Rio, Anne-Laure Daniau, Charlotte Skonieczny, Catherine Orliac)

Lipid-based records of hydroclimate change during the occupancy period of Rapa Nui (William J. D’Andrea*, Raymond S. Bradley, Andrea Seelenfreund, Núria Cañellas-Boltà, Olga Margalef, Santiago Giralt, Alberto Sáez, Sergi Pla-Rabes, Valentí Rull)

Part IV. Deforestation and extinctions

Economic causes and consequences of deforestation on Easter Island (alternative: Open-access resources and the rise and fall of Easter Island) (James Brander*)

Spatial and temporal patterns of deforestation and other socioecological features of Easter Island (Peter Steiglechner, Esteban Acevedo-Trejos, Agostino Merico*)

Flora of Easter Island – past and present (Georg Zizka*)

Interpreting past terrestrial ecosystems of Rapa Nui: documenting palaeoecological proxies for biodiversity change (Matthew Prebble*, Núria Cañellas-Boltà, Olga Margalef, Mark Horrocks, Dorren Bowdery, Dave McWethy, Valentí Rull)
Morphological changes of the Te Niu landscape from AD 1300 to the mid-19th century (Joan A. Wozniak*)

**Part V. Collapse or resilience?**


Environmental change and cultural continuity – the extraordinary achievements of the Rapa Nui society after deforestation (Andreas Mieth*, Burkhard Vogt, Annette Külhem, Hans-Rudolf Bork)

Malthusian models and population history of Rapa Nui (Carl L. Lipo*, Robert DiNapoli, Terry L. Hunt)

The population dynamics of Rapa Nui (Easter Island): synthesizing advances from the fields of archaeology, demography and ecology (Cedric O. Puleston*, Thegn Ladefoged)

What did collapse on Rapa Nui before European contact? (Claudio Cristino, Patricia Vargas*)

Modeling the Easter Island population and ecology with uncertainty and Bayesian parameter inference (William Basener*)

**Part VI. European contact**

The struggle to be Rapanui: some sharp points about remote Easter Island (Grant McCall*)

First contact and after: social, political, and cultural change on Rapa Nui 1722-1900 (Joshua Pollard, Kate Welham*)

Eighteenth century fake news about Easter Island (Rapa Nui) and the persistence of myths (Jan Boersema*)

**Part VII. Synthesis**

An integrated approach (Valenti Rull, Christopher Stevenson et al.)