# Climate Change & Cultural Dynamics

A GLOBAL PERSPECTIVE ON MID-HOLOCENE TRANSITIONS



David G. Anderson, Kirk A. Maasch and Daniel H. Sandweiss (EDITORS)



# CLIMATE CHANGE AND CULTURAL DYNAMICS

# A Global Perspective on Mid-Holocene Transitions

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#### DEDICATION

Dedicated to the memory of Thor Heyerdahl (1914–2002), and all those exploring relationships between climate and culture, perhaps the greatest challenge facing our species in the twenty-first century

### **Preface and Acknowledgments**

This volume explores climate and culture change during the middle part of the current interglacial period, the Mid-Holocene era from roughly 9000 to 5000 years ago. The original impetus for what follows was a conference held in October of 1998 at the University of Maine on "Climate and Culture at 3000 B.C." organized by Daniel H. Sandweiss and Kirk A. Maasch, and sponsored by the Foundation for Exploration and Research on Cultural Origins (FERCO). Those who spoke at the conference included Atholl Anderson, David Anderson, Daniel Belknap, Andrew Bush, Heidi Cullen, Michael Gagan, Martin Grosjean, George Jacobson, Wibjorn Karlén, Douglas Kennett, Lars Larsson, Tracey Lu, Konstantin Lutaenko, Madonna Moss, Melanie Riedinger James Richardson, Harold Rollins, David Sanger, James Shulmeister, Calogero Santoro, Lonnie Thompson, Barbara Voorhies, Harvey Weiss, Fred Wendorf, and Irina Zhushchikhovskaya. Betty Meggers was originally scheduled to speak at the conference but was unable to attend. Many subsequently contributed to this volume.

One of FERCO's founders was the anthropologist Thor Heyerdahl, perhaps best known for his research on early settlement in Oceania, recounted in books like *Kon-Tiki* and *Aku-Aku*, and whose welcoming remarks to the attendees are presented in Foreword. As Thor Heyerdahl also noted at the start of the conference, however, it was the "unselfish and profound interest of FERCO economic sponsor and cofounder Fred Olsen," a Norwegian businessman, that made FERCO possible. The editors wish to thank both of these gentlemen for inspiring, and helping finance the production of this volume.

In his later years, as the Foreword clearly demonstrates, Heyerdahl was fascinated by the processes leading to the emergence of complex societies around the world, and to the role that climate might have played in these developments. The Mid-Holocene was a time of particular interest, since it was then when the foundations of complex society or civilization were laid down in many parts of the world. Heyerdahl believed that the climate of the time, the warmest period during the Holocene, facilitated these cultural developments, and additionally offered parallels and lessons for the modern world.

Although the conference participants discussed the possibility of putting together an edited volume of papers, it was not until several years later that the idea was revisited, and the papers were finalized, most in 2006 and early 2007. This delay of a decade was fortunate, since interest in climate change has grown in recent years, and the scientific literature on the subject has multiplied dramatically. Although this volume has thus had a long gestation period, its appearance at this time is

opportune, when concern with climate change is drawing even more attention than it did a decade ago.

This volume includes chapters authored by both paleoclimatologists and archaeologists, in order to confront climatic and cultural records directly. Most studies of climate and culture are carried out either by archaeologists using the paleoclimate literature or paleoclimatologists accessing the archaeological literature. Only rarely do the two sides work closely together on the final publication, and consequently misinterpretation of the other record can occur. The participants in this volume agreed that their chapters should be co-authored where possible by both kinds of scientists, to make certain that both kinds of data are properly reported and used. Most of the chapters in this volume are the result of such cooperation, often among scholars who had not previously worked together.

Many people deserve our thanks in the production of this volume. Jennifer Helé, the acquisitions editor at Academic/Elsevier, offered advice, encouragement, and suggestions throughout the preparation of the manuscript. The actual production of the manuscript was accomplished by Mrs. Linda Versteeg, Elsevier physical science books development editor, and her staff. Betsy Lightfoot, Elsevier Production Editor, Amsterdam, and Dr. M.S. Rajkumar and the production team at Macmillan India Limited, Bangalore, in particular deserve our thanks for their help with the final production of the volume. The final version of most of the artwork appearing in the volume was prepared by Kirk A. Maasch, whose skills extend well beyond those of author and editor, something the other two editors have deeply appreciated and wish to specifically acknowledge.

At each of our institutions people have provided help. At the University of Tennessee Elizabeth Martin helped with the copyediting and reference checking for each chapter. Andrew Kramer, chair of the Department of Anthropology, provided direct support as well as continual encouragement as the manuscript came together. Scott Meeks, Shane Miller, Jason O'Donoughue, and Jan Simek also provided advice and assistance in the production effort.

The editors of this volume would like to especially thank Craig Pacelli, associate editor for Education, Arts & Humanities Journals, and John A. Brown, senior sales administrator, permissions, of the Taylor & Francis Group, LLC, for permission to reprint the text of Chapter 7, "Early State Formation in Southern Mesopotamia: Sea Levels, Shorelines, and Climate Change" by Douglas J. Kennett and James P. Kennett. This chapter appeared in somewhat different form in the *Journal of Island & Coastal Archaeology* and is reproduced here thanks to the permission of the authors and the press. We also wish to thank Scott M. Fitzpatrick, the journal editor, for his help in facilitating the use of this chapter.

All three editors would like to thank their spouses for their support and patience during the long hours we spent producing this volume; even while often with them at home our minds were sometimes far in the past, in the Mid-Holocene!

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