

QUATERNARY RESEARCH

SENIOR EDITORS

Derek B. Booth
Alan R. Gillespie

ASSOCIATE EDITORS

Kenneth Adams, Patrick J. Bartlein, Bax R. Barton, Robert Booth, John Dodson, David Fink, Jaime Fucugauchi, Vance T. Holliday, Kathryn A. Hoppe, Matthew Lachniet, Zhongping Lai, Pete Langdon, Thomas Lowell, Thomas M. Marchitto, Jr., Curtis W. Marean, David J. Meltzer, Daniel R. Muhs, James O'Connor, Michael A. O'Neal, W. Wyatt Oswald, Lewis A. Owen, Ashok K. Singhi, Xiaoping Yang

EDITORS EMERITI

A. Lincoln Washburn
Estella B. Leopold
Stephen C. Porter
Eric J. Steig

MANAGING EDITOR

Karin Perring

Quaternary Research Center

Box 351360

University of Washington
Seattle, WA 98195-1360

EDITORIAL ADVISORY BOARD

ZHISHENG AN

Institute of Earth Environment, Chinese Academy of Sciences
Environmental change in arid areas; the deserts and salt lakes of northwestern China; Chronology of human migration; Luminescence dating

THURE E. CERLING

University of Utah
Terrestrial Geochemistry and Cosmogenic Isotopes

JOHN DODSON

Australian Nuclear Science and Technology Organization
Quaternary Environments

YEHOUDA ENZEL

Hebrew University of Jerusalem
Desert Geomorphology

DONALD K. GRAYSON

University of Washington
Archaeology and Vertebrate Paleontology: North America and Western Europe

RICHARD G. KLEIN

Stanford University
Archaeology and Vertebrate Paleontology: Africa

NICHOLAS LANCASTER

Desert Research Institute
Quaternary Geology and Geomorphology: Africa, Southwestern United States, Desert Regions

SOCORRO LOZANO-GARCIA

Universidad Nacional Autónoma de México
Sediment and Ice-core Studies: Tropical America

COLIN V. MURRAY-WALLACE

University of Wollongong
Coastal Evolution; Neotectonism; Geochronology

MILAN J. PAVICH

U. S. Geological Survey
Quaternary Soils: Southeastern, Mid-Continent and Southwestern United States

DAVID E. SUGDEN

University of Edinburgh
Glacial Geomorphology and Landscape Evolution: Antarctica, Iceland, Northwest Europe and Patagonia

ANDREI A. VELICHKO

Russian Academy of Sciences
Geography and Geomorphology: Northern Eurasia

KENNETH L. VEROSUB

University of California
Paleoclimatology: China, Russia, Antarctica, and North America

CATHY L. WHITLOCK

Montana State University
Paleoecology and Vegetation History: North and South America

LIPING ZHOU

Peking University
Loess, Geochronology, and Geomorphology: Central Asia, East Asia



Quaternary Research is the research journal for the American Quaternary Association

Quaternary Research has no page charges. A full and complete Guide for Authors can be found at <http://elsevier.com/locate/yqres>.

Cover photo. An interior view of Xianglong Cave in the southern Qinling Mountains, central China. Photo by Liangchan Tan.