ISSN 0033-5894 Volume 87, Issue 2, March 2017

QR QUATERNARY RESEARCH



EDITORS Derek B. Booth Nicholas Lancaster Lewis A. Owen

lished online by Cambridge University Press



QUATERNARY RESEARCH

SENIOR EDITORS

Derek B. Booth Nicholas Lancaster Lewis A. Owen

ASSOCIATE EDITORS

Patrick J. Bartlein, Robert Booth, Louisa Bradtmiller, John Dodson, David Fink, Jaime Fucugauchi, Vance T. Holiday, Matthew Lachniet, Zhongping Lai, Terri Lacourse, Pete Langdon, Thomas Lowell, Curtis W. Marean, Barbara Mauz, David J. Meltzer, James O'Connor, Michael A. O'Neal, W. Wyatt Oswald, Jeff Pigati, James Shulmeister, Ashok K. Singhvi, Xiaoping Yang

EDITORS EMERITI

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

MANAGING EDITOR Karin Perring

Quaternary Research Center Box 351360 University of Washington Seattle, WA 98195-1360

EDITORIAL ADVISORY BOARD

ALAN R. GILLESPIE University of Washington Glacial Geology, Paleoclimate, Megaflooods, Central Asia

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

SOCORRO LOZANO-GARCIA Universidad Nacional Autónoma de México Tropical Paleoecology, Fossil Pollen, Charcoal Analysis, Environmental Reconstruction of Past Climates and Human Influences On Past Environments 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

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

Cover photo. Photograph of the Loch Vale watershed, located in remote wilderness of Rocky Mountain National Park, Colorado, USA. Glaciated alpine watersheds such as this are typically very sensitive to climate change and anthropogenic disturbance. The cirque lake (foreground) is The Loch, which formed during the Pinedale-age glacial advance over Precambrian granitic bedrock. Sedimentation in The Loch began shortly after the last glacial maximum and records past climatic, glacial, and hydrologic changes occurring within the watershed. Photo: Jason R. Price. (See the article by Price et al., pages 191-207, in this issue.)

ZHISHENG AN Institute of Earth Environment, Chinese Academy of Sciences Environmental Change in Arid Areas, 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