

# QR | QUATERNARY RESEARCH



## EDITORS

Derek B. Booth  
Nicholas Lancaster  
Lewis A. Owen



**CAMBRIDGE**  
UNIVERSITY PRESS

## Quaternary Research

Published on behalf of Quaternary Research Center  
[www.cambridge.org/core/journals/quaternary-research](http://www.cambridge.org/core/journals/quaternary-research)

Volumes 117-122

eISSN: 1096-0287; ISSN: 0033-5894

---

### Editors

Derek B. Booth, University of Washington  
Nicholas Lancaster, Desert Research Institute  
Lewis A. Owen, North Carolina State University

### Associate Editors

Lesleigh Anderson, U.S. Geological Survey  
Pat Bartlein, University of Oregon  
Louisa Bradtmiller, Macalester College  
John Dodson, Institute of Earth Environments, Xi'an, China and University of Wollongong  
Jason Dortch, University of Kentucky  
Mary Edwards, University of Southampton and University of Alaska  
Tyler Faith, Natural History Museum of Utah and University of Utah  
Jaime Urrutia Fucugauchi, National University of Mexico and Instituto de Investigacion y Estudios Avanzados Chicxulub  
Radu Iovita, New York University  
Kathleen R. Johnson, University of California, Irvine  
Terri Lacourse, University of Victoria  
Pete Langdon, University of Southampton  
Thomas Lowell, University of Cincinnati  
Curtis W. Marean, Arizona State University  
Jim O'Connor, U.S. Geological Survey  
Wyatt Oswald, Emerson College  
Yeong Bae Seong, Korea University  
James (Jamie) Shulmeister, University of Canterbury, Christchurch  
Ximena Villagran, Museu de Arqueologia e Etnologia, Universidade de São Paulo  
Xiaoping Yang, Zhejiang University

### Editorial Board

Zhisheng An, Institute of Earth Environment, Chinese Academy of Sciences  
Gail Ashley, Rutgers University  
Julie Brigham-Grette, University of Massachusetts  
John Dodson, Institute of Earth Environments, Xi'an, China and University of Wollongong  
Yehouda Enzel, Hebrew University of Jerusalem  
David Fink, Australian Nuclear Science and Technology Organisation  
Sheri Fritz, University of Nebraska – Lincoln  
Alan R. Gillespie, University of Washington  
Lisa Graumlich, University of Washington  
Vance T. Holliday, University of Arizona  
Richard G. Klein, Stanford University  
Melanie Leng, British Geological Survey, University of Nottingham  
Danial R. Muhs, U.S. Geological Survey  
Colin V. Murray-Wallace, University of Wollongong  
Jay Quade, Department of Geosciences, University of Arizona  
Maria Socorro Lozano-Garcia, Universidad Nacional Autónoma de México  
Cathy L. Whitlock, Montana State University  
Yurena Yanes, University of Cincinnati  
Liping Zhou, Peking University

Information about editors and editorial board members correct as of 1st January 2024. For the latest information please see <https://www.cambridge.org/core/journals/quaternary-research/editors-and-advisory-board>

## **Aims & Scope**

*Quaternary Research* is an international journal devoted to the advancement of the interdisciplinary understanding of the Quaternary Period. We aim to publish articles of broad interest with relevance to more than one discipline, and that constitute a significant new contribution to Quaternary science. The journal's scope is global, building on its 50-year history in advancing the understanding of Earth and human history through interdisciplinary study of the last 2.6 million years.

Research areas include geoarcheology, geochemistry and geophysics, geochronology, geomorphology, glaciology, neotectonics, paleobotany and paleoecology, paleoclimatology, paleogeography, paleohydrology, paleontology, paleoceanography, paleopedology, Quaternary geology, volcanology and tephrochronology.

## **Quaternary Research Center**

The QRC is a community of scholars collaborating and fostering interdisciplinary environmental research at the University of Washington through strategic investments in seed grants, expeditions, seminars, workshops, and the publication of *Quaternary Research*.

© University of Washington  
Published by Cambridge University Press.



**CAMBRIDGE**  
UNIVERSITY PRESS



# QUATERNARY RESEARCH

VOLUME 122, NOVEMBER 2024

## CONTRIBUTION TO THE QR FORUM

- 1 The selective geography of volcanism in oral traditions  
*Leigh Franks, Patrick D. Nunn and Adrian McCallum*

## RESEARCH ARTICLES

- 18 Unravelling 6000 years of interplay among environmental changes, anthropogenic activities, and Vesuvius eruptions in the upper Sarno Plain (Campania, Italy)  
*Elda Russo Ermolli, Halinka Di Lorenzo, Nicoletta Santangelo, Antonio Santo, Chiara Comegna and Paola Petrosino*
- 40 New insights into the glacial and relative sea-level history of the western Fraser Lowland based on sediment cores from geotechnical drilling for the Evergreen Tunnel, British Columbia, Canada  
*Lionel E. Jackson, Brent C. Ward, Stephen R. Hicock, Raphael Gromig, John J. Clague and Derek G. Turner*
- 62 Insights into the synergistic effects of tectonics and climate from the formation and evolution of the Hongwen allochthonous deposit, southwestern China  
*Yuchao Li, Jianping Chen, Qing Wang, Zhihai Li, Yansong Zhang and Jianhua Yan*
- 76 Sedimentation rate changes across the Chinese Loess Plateau from luminescence dating of Malan loess in the Sanmen Gorge  
*Gang Hu, Huiying Wang, Bo Xu, Ping Wang, Liubing Xu, Jinming Xie, Xing Wang, Long Qiao, Changhui Guo, Junkang Wang, Jiafu Zhang, Wenxu Wang, La Ta and Lei Wang*
- 92 Large herbivore  $\delta^{18}\text{O}$  as a proxy for aridity in the South African winter and year-round rainfall zone  
*Julie Luyt, J. Tyler Faith and Judith Sealy*
- 106 Understanding the fluvial capture of the Guadix-Baza Basin in SE Spain through its oldest exorheic deposits  
*Francisco J. García-Tortosa, Pedro Alfaro, Iván Martín-Rojas, Iván Medina-Cascales and Santiago Giralt*
- 122 Sedimentologic successions and chronology of the late Pleistocene deposits on the southern Kola Peninsula, northern Europe  
*Olga Korsakova, Anatoly Molodkov, Nataliya Zaretskaya and Vasily Grigoriev*
- 143 The relevance of biotic processes on modern tufa deposits, with an example from the Bonito region, Central-West Brazil  
*Jéssica Thaís Ferreira Oste, Almério Barros França, Leonardo Fadel Cury and Anelize Manuela Bahniuk*

**Photo Caption:** View southwards from tufa towers on the shore of Mono Lake in east-central California, USA. This hypersaline alkaline lake has a productive ecosystem based on the endemic brine shrimp (*Artemia monica*) and alkali flies (*Ephydra hians*). The name “Mono” derives from “Monachi,” a Yokut term for the tribes that lived on both sides of the Sierra Nevada, and the region has an archaeological record extending back into the Early Holocene. Recent freshwater diversions severely lowered lake levels starting in AD 1941. Litigation in 1994 allowed the water to steadily rise. Levels are still far short of early 20th century heights, however, partially because of many years of drought in the American West. Mono Lake Basin has a geomorphic, volcanic, glacial and lacustrine record extending beyond the early Quaternary. It has been the focus of much research over the years, including many prominent papers published in Quaternary Research on glaciation, lacustrine sedimentology, geochemistry, palynology, archeology, and climate change that exemplify the interdisciplinary emphasis of the journal (see Bursik and Gillespie, 1993, 39, 24–35; Benson et al., 1998, 49, 1–10; Davis, 1999, 52, 243–249; Madsen et al., 2002, 57, 382–390; Zimmerman et al., 2011, 76, 264–271; Bacon et al., 2018, 90, 276–302). (Photo by Lewis Owen.)