

The International Journal of Conservation

Oryx

www.oryxthejournal.org

Published for **Fauna & Flora**

July 2023 · Volume 57 · Number 4



Human–wildlife interactions

EditorDr Martin Fisher *Fauna & Flora, UK***Managing Editor**Julia Hochbach *Fauna & Flora, UK***Editorial Assistant**Emma Sinnett *Fauna & Flora, UK***Senior Editors**Professor Bill Adams *University of Cambridge, UK*Professor Andrew Balmford, FRS *University of Cambridge, UK*Dr Porter P. Lowry II *Missouri Botanical Garden, USA and France*Dr Mike Maunder *Cambridge Conservation Initiative, UK*Professor Jeffrey A. McNeely *Thailand*Professor E. J. Milner-Gulland *University of Oxford, UK*Dr John G. Robinson *Wildlife**Conservation Society, USA*Professor William Sutherland *University of Cambridge, UK***International Board of Editors**Dr Elizabeth L. Bennett *USA*Dr Mar Cabeza *Finland*Professor Lisa Campbell *USA*Dr Liana Chua *UK*Dr Jenny Daltry *USA and UK*Dr Aparajita Datta *India*Dr Abigail Entwistle *UK*Professor Brendan Fisher *USA*Professor Brendan J. Godley *UK*Professor Rhys Green *UK*Professor George Holmes *UK*Professor Zhigang Jiang *China*Professor Julia Jones *UK*Ashish Kothari *India*Dr David Mallon *UK*Dr Helen Newing *UK*Sara Oldfield, OBE *UK*Dr Kent H. Redford *USA*Dr Jon Paul Rodríguez *Venezuela*Dr Anthony B. Rylands *USA*Professor Chris Sandbrook *UK*Professor Philip Seddon *New Zealand*Dr Aby Sene-Harper *USA*Professor Bob Smith *UK*Dr Paul Smith *UK*Dr Matt Walpole *UK***Fauna & Flora Patron**

HRH The Prince of Wales

President

HRH Princess Laurentien of The Netherlands

Vice Presidents

Baroness Valerie Amos, LC, CH, PC

Professor Sir Roy Anderson, FRS, FMedSci

Sir David Attenborough, OM, FRS

Hon. Najib Balala

Georgina Bloomberg

The Lord Browne of Madingley, FR Eng

Lindsay Bury

Dee Caffari

Charlene de Carvalho-Heineken

Giles Clark

Viscount Philippe de Spoelberch

Dame Judi Dench, CH

Dr Lee Durrell

Hugh Fearnley-Whittingstall

Stephen Fry

Rupert Goodman

Edward Hoare

Tim Jarvis, AM

Anders Johansson

The Lady Emma Kitchener, LVO

Rove McManus

Justin Mundy, LVO

Blaine T. Phillips

The Rt Hon the Lord Randall of Uxbridge

Dr Lisbet Rausing

Gareth Rhys Williams

Dr Claudio Segré

The Rt Hon Mark Simmonds

Victoria Stack

Jon L. Stryker

Andrew Sykes

Edward van Cutsem

Antonio Versace

Charles Whitbread, DL

Dr Adrian Wilson

Nigel Winsler

James Wong

The Rt Hon Baroness Young of Old Scone

Jochen Zeitz

Council**Chair** Dr Liz Rogers**Vice Chair** Annette Lanjouw**Vice Chair** David Gibson**Treasurer** Paul Baldwin

Jeffrey Blumberg

Anna Gavazzi

Senator Abshiro Halake

Tony Juniper, CBE

Benjamin Khalili

Miguel Nogales

Richard Plackett

Hugh Sloane

Kimberly Stewart

Hugo van Vredenburg

Richard Walker, OBE

Professor Joanne Webster, FLS, FRSB

Chief Executive Officer Kristian Teleki**US Board of Directors****President** Professor Sandra Knapp, OBE**Secretary** Diana van de Kamp

Diane Alfano

Millie Kerr

Lorenzo Nogales

Tola St. Matthew-Daniel

Australian Board of Directors**Chairman** Michael Forsdick

Nick Bubb

Dr Angela Dwyer

Jonny Wright

Open access and publication charges *Oryx* (ISSN 0030-6053) is published six times per year (one volume per annum) in January, March, May, July, September and November. As a gold open access journal, *Oryx* is published without access restrictions and receives no subscription revenue. The costs of publication are partially covered by an article processing charge levied upon authors, their funding bodies or institutions. The 2023 charge is GBP 1,950/USD 2,950 for Articles, Reviews and Forum Articles (GBP 975/USD 1,475 for Short Communications). No charge is payable for Conservation News items, Letters, Letter Responses, Book Reviews or Editorials. Members of Fauna & Flora International receive a 15% discount on the article processing charge. *Oryx* is committed to supporting all conservationists, and discounts and waivers are available to authors unable to pay the full article processing charge. For full details visit oryxthejournal.org/authors/guidelines-for-authors/#open-access

Fauna & Flora *Oryx* member subscription *Oryx* membership of Fauna & Flora starts from GBP 45 per year for concessions and GBP 85 for other members (or equivalent price in USD/EUR). For more information about Fauna & Flora *Oryx* membership visit fauna-flora.org/appeals/oryx.

Internet access This journal is freely available to read on Cambridge Core at cambridge.org/oryx. For other Press titles access cambridge.org.

Submission of manuscripts Guidelines for authors are available online at oryxthejournal.org/authors/guidelines-for-authors. Manuscripts should be submitted at mc.manuscriptcentral.com/oryx.

Back volumes Print copies of the current volume and two previous volumes can be obtained from Cambridge University Press at Cambridge University Press, Journals Fulfilment Department, University Printing House, Shaftesbury Road, Cambridge, CB2 8BS, UK; or in the USA, Canada and Mexico: Journals Fulfilment Department, Cambridge University Press, 1 Liberty Plaza, Floor 20, New York, NY, 10006, USA. Requests for previous volumes should be directed to the editorial office at oryx@fauna-flora.org.

Paper and printing *Oryx* is printed on FSC™-certified paper and cover board. FSC is an independent, nongovernmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see fsc.org for more information.

Printed in Great Britain by Henry Ling Limited, The Dorset Press, Dorchester, DT1 1HD