



**DEVELOPMENTS IN PRIMATOLOGY:
PROGRESS AND PROSPECTS**

Series Editor: Russell H. Tuttle,
University of Chicago, Chicago, IL

Primates of Gashaka

Socioecology and Conservation
in Nigeria's Biodiversity Hotspot



Volker Sommer
Caroline Ross
Editors

 Springer



**DEVELOPMENTS IN PRIMATOLOGY:
PROGRESS AND PROSPECTS**

Series Editor: Russell H. Tuttle,
University of Chicago, Chicago, IL

Primates of Gashaka

Socioecology and Conservation
in Nigeria's Biodiversity Hotspot



Volker Sommer
Caroline Ross
Editors

 Springer

Developments in Primatology: Progress and Prospects

For other titles published in this series, go to
www.springer.com/series/5852

Volker Sommer • Caroline Ross
Editors

Primates of Gashaka

Socioecology and Conservation
in Nigeria's Biodiversity Hotspot

 Springer

Editors

Volker Sommer
University College London
Department of Anthropology
Gower Street
WC1E 6BT London
United Kingdom
v.sommer@ucl.ac.uk

Caroline Ross
Roehampton University
Department of Life Sciences
Holybourne Avenue
SW15 4JD London
United Kingdom
c.ross@roehampton.ac.uk

ISBN 978-1-4419-7402-0 e-ISBN 978-1-4419-7403-7
DOI 10.1007/978-1-4419-7403-7
Springer New York Dordrecht Heidelberg London

© Springer Science+Business Media, LLC 2011

All rights reserved. This work may not be translated or copied in whole or in part without the written permission of the publisher (Springer Science+Business Media, LLC, 233 Spring Street, New York, NY 10013, USA), except for brief excerpts in connection with reviews or scholarly analysis. Use in connection with any form of information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed is forbidden.

The use in this publication of trade names, trademarks, service marks, and similar terms, even if they are not identified as such, is not to be taken as an expression of opinion as to whether or not they are subject to proprietary rights.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

In memoriam

Jeremiah Adanu (1969–2004)

Mallam Salamu Waziri (c1945–2007)

Doris Nyanganji (c1976–2008)

Yakubu Ahmadu (c1967–2009)

Bobbo Buba (c1978–2010)

Ymke Warren (1970–2010)

Foreword

The importance of research for human development and the management of protected areas cannot be overemphasized. Early in the history of national parks, the primary role of research was to provide information for interpretative talks and displays, as a result of visitors' demands to learn more about the interesting phenomena they encountered. More recently, research has been directed toward collecting data in the field and providing analyses that inform and influence policy recommendations, thereby ultimately improving management effectiveness of protected areas and development of community projects.

Nigeria's Gashaka Gumti National Park embodies unique biological, physical, and cultural resources. The expanses of this wilderness, combined with a protective government policy, attract researchers from varied disciplines to this part of West Africa. Their efforts are unique, considering the challenging nature of the area, the invested time, and the remote location of the research centre. Researchers conducting studies of these primate communities deserve commendation, considering their patience, sacrifice, and commitment while trailing their subjects and collecting detailed information on their socio-ecology.

The results of such in-depth research as published here showcase the rich biodiversity potential embedded in Nigeria's largest national park. I warmly recommend this book, which adds much scientific knowledge and highlights some of Africa's hidden treasures for the world to see. It is my hope that this book will serve as a reference and source of knowledge and information to both scientists and nature lovers, particularly those in the field of biodiversity conservation and eco-tourism.

With the support and cooperation of all stakeholders, we are dedicated to the enforcement of conservation policies that aim to protect unique ecosystems such as the vast and serene Gashaka Gumti National Park for the benefit of wildlife and humans alike.

Conservator General,
Nigeria National Park Service
Abuja, Nigeria, April 2010

Alhaji Haruna Tanko Abubakar

Contents

1 Exploring and Protecting West Africa’s Primates: The Gashaka Primate Project in Context.....	1
Volker Sommer and Caroline Ross	
2 To Save a Wilderness: The Creation and Development of Gashaka Gumti National Park, Nigeria	39
Richard Barnwell	
3 Hunters, Fire, Cattle: Conservation Challenges in Eastern Nigeria, with Special Reference to Chimpanzees.....	55
Jeremiah Adanu, Volker Sommer, and Andrew Fowler	
4 Monkeys and Apes as Animals and Humans: Ethno-Primateology in Nigeria’s Taraba Region.....	101
Gilbert Nyanganji, Andrew Fowler, Aylin McNamara, and Volker Sommer	
5 The Bush as Pharmacy and Supermarket: Mechanisms and Functions of Plant Use by Human and Non-human Primates at Gashaka	135
Yianna Koutsioni and Volker Sommer	
6 Fulani of the Highlands: Costs and Benefits of Living in National Park Enclaves.....	231
David Bennett and Caroline Ross	
7 Pan-African Voyagers: The Phylogeography of Baboons	267
Dietmar Zinner, Umaru Buba, Stephen Nash, and Christian Roos	
8 Crop-raiding and Commensalism in Olive Baboons: The Costs and Benefits of Living with Humans	307
Ymke Warren, James P. Higham, Ann M. Maclarnon, and Caroline Ross	

**9 How Different Are Gashaka’s Baboons?
Forest and Open Country Populations Compared 333**
Caroline Ross, Ymke Warren, Ann M. Maclarnon,
and James P. Higham

10 Keeping in Contact: Flexibility in Calls of Olive Baboons 361
Elodie Ey and Julia Fischer

**11 Not Words but Meanings? Alarm Calling Behaviour
in a Forest Guenon 385**
Kate Arnold, Yvonne Pohlner, and Klaus Zuberbühler

**12 Patriarchal Chimpanzees, Matriarchal Bonobos:
Potential Ecological Causes of a *Pan* Dichotomy 417**
Volker Sommer, Jan Bauer, Andrew Fowler, and Sylvia Ortmann

**13 Panthropology of the Fourth Chimpanzee:
A Contribution to Cultural Primatology 451**
Andrew Fowler, Alejandra Pascual-Garrido, Umaru Buba,
Sandra Tranquilli, Callistus Akosim, Caspar Schöning,
and Volker Sommer

**14 Will the Nigeria-Cameroon Chimpanzee Go Extinct?
Models Derived from Intake Rates of Ape Sanctuaries 493**
Nicola Hughes, Norm Rosen, Neil Gretskey, and Volker Sommer

Index 525

Contributors

Jeremiah Adanu

c/o Joy Adanu, Kona Rd, near Akuka's Lodge, Jalingo, Taraba State, Nigeria
jereadanu@yahoo.com

Callistus Akosim

Department of Forestry and Wildlife Management, Federal University of Technology,
PMB 2076, Yola, Adamawa State, Nigeria

Kate Arnold

School of Psychology, University of St. Andrews, St. Andrews,
KY16 9JP, Scotland UK
ka11@st-andrews.ac.uk

Richard Barnwell

The Old Well, Fewster Road, Nailsworth GL6 0DH, UK
janebarnwell@btinternet.com

Jan Bauer

Research Group Evolutionary Ecology, Leibniz Institut für Zoo- und
Wildtierforschung, Alfred-Kowalke-Str. 17, 10315 Berlin, Germany
Jan.Bauer.Berlin@web.de

David Bennett

Centre for Research in Evolutionary Anthropology,
Roehampton University, Holybourne Avenue, London SW15 4JD, UK
dawudbennett@googlemail.com

Umaru Buba

Gashaka Primate Project, PMB 08, Serti 663001, Taraba State, Nigeria
bumami2004@yahoo.com

Elodie Ey

Research Group Human genetics and cognitive functions, Pasteur Institute,
25 rue du Docteur Roux, 75724 Paris cedex 15, France
elodie.ey@pasteur.fr

Julia Fischer

Department of Cognitive Ethology, German Primate Centre,
Kellnerweg 4, D-37077 Göttingen, Germany
fischer@cog-ethol.de

Andrew Fowler

Max-Planck-Institut für Evolutionäre Anthropology,
Deutscher Platz 6, 04103 Leipzig, Germany
andrew_fowler@eva.mpg.de

Neil Gretskey

218 16th Street, Hermosa Beach, CA 90254, USA
ngretskey@econ.ucla.edu

James P. Higham

Institute for Mind and Biology, University of Chicago, Chicago, IL 60637, USA
jhigham@uchicago.edu

Nicola Hughes

Department of Anthropology, University College London,
Gower Street, London WC1E 6BT, UK
nicolalhughes@yahoo.co.uk

Yianna Koutsioni

11 Konitsis Street, Kifissia 14561, Athens, Greece
yiannakoutsioni@hotmail.com

Ann M. Maclarnon

Centre for Research in Evolutionary Anthropology, Roehampton University,
Holybourne Avenue, London SW15 4JD, UK
a.maclarnon@roehampton.ac.uk

Aylin McNamara

Zoological Society of London, Regent's Park, London NW1 4RY, UK
aylin.mcnamara@zsl.org, aylin.mcnamara@zsl.org

Stephen Nash

Department of Anatomical Sciences, H.S.C., State University of New York,
Stony Brook, NY 11794-8081, USA
snash@ms.cc.sunysb.edu, s.nash@conservation.org

Gilbert Nyanganji

Department of Biological Sciences, University of Maiduguri,
PMB 1069, Maiduguri, Borno State, Nigeria
gilsnyanganji@yahoo.com

Sylvia Ortmann

Research Group Evolutionary Ecology, Leibniz Institute for Zoo
and Wildlife Research, Alfred-Kowalke-Str. 17, 10315 Berlin, Germany
ortmann@izw-berlin.de

Alejandra Pascual-Garrido

School of Biological Sciences, Universidad Complutense de Madrid,
Madrid 28040, Spain and J. F. Seguí 4751 1p “E” (1425), Buenos Aires, Argentina

Yvonne Pohlner

Institut für Biologie I, Albert Ludwigs Universität, Hauptstrasse 1,
79104, Freiburg, Germany
yvonne.pohlner@googlemail.com

Christian Roos

Primate Genetics Laboratory, Deutsches Primatenzentrum,
Kellnerweg 4, 37077 Göttingen, Germany
croos@dpz.eu

Norman Rosen

27 16th Street, Hermosa Beach, CA 90254, USA
normrosen@aol.com

Caroline Ross

Centre for Research in Evolutionary Anthropology,
Roehampton University, Holybourne Avenue, London SW15 4JD, UK
c.ross@roehampton.ac.uk

Caspar Schöning

Centre of Social Evolution, Department of Biology,
University of Copenhagen, Universitetsparken 15, 2100 Copenhagen/Denmark;
currently Länderinstitut für Bienenkunde, Friedrich-Engels-Str. 32,
16540 Hohen Neuendorf, Germany
caspar@zedat.fu-berlin.de

Volker Sommer

Department of Anthropology, University College London,
London WC1E 6BT, UK
v.sommer@ucl.ac.uk

Sandra Tranquilli

Department of Anthropology, University College London,
Gower Street, London WC1E 6BT, UK
sandra_tranq@hotmail.com

Ymke Warren

Research Coordinator, Takamanda-Mone Landscape Project,
Africa Programme – Wildlife Conservation Society, c/o Limbe Botanic Gardens,
PO Box 1308, Limbe, South West Province, Cameroon
anicholas@wcs.org

Dietmar Zinner

Cognitive Ethology Laboratory, Deutsches Primatenzentrum,
Kellnerweg 4, 37077 Göttingen, Germany
dzinner@gwdg.de