Land Use Change and Mountain Biodiversity

Eva M. Spehn

Maximo Liberman

Christian KörnerUniversity of Basel, Switzerland

University of Basel, Switzerland

La Paz. Bolivia

Examines the effects of fire and grazing on vegetation structure and plant species richness

Part of the worldwide biodiversity program DIVERSITAS, the Global Mountain Biodiversity Assessment (GMBA) assesses the biological richness of high-elevation biota. GMBA's focus includes the uppermost forest regions or their substitute rangeland vegetation, the treeline ecotone, and the alpine and nival belts. Providing more than description, the GMBA explains the causes of biological richness and how diversity changes over time. Because biodiversity changes often result from human land use, part of the GMBA agenda is the assessment of land use impacts. These assessments are critical in low-latitude regions, where land use pressure on upland biota is the greatest.

The chapters of Land Use Change and Mountain Biodiversity derive from a peer-review process that followed presentations offered at two GMBA workshops, one in Tanzania and the other in Bolivia. More than 50 researchers actively participated in these events, discussing information from all major mountain regions, with a particular focus on the Andes and on African mountains.

FEATURES

- Offers presentations derived from two major Global Mountain Biodiversity Assessment workshops
- Includes an overview chapter on high elevation land use, biodiversity, and ecosystem functioning
- Provides a synthesis of human impacts on highland biodiversity, with a focus on fire and grazing
- Reviews anthropogenic disturbances of biodiversity in Australia, India, Nepal, Argentina, Columbia, Tajikistan, and elsewhere
- Discusses the impact of fire on: Afroalpine plant biodiversity; Mt. Kilimanjaro's vegetation and geometrid moths; and Madagascar's sclerophyllous forests and small mammals
- Analyzes forest structure and tree regeneration in subalpine wood pastures

Catalog no. 3523, January 2006, 376 pp. ISBN: 0-8493-3523-X, \$109.95 / £62.99



Introduction

High-Elevation Land Use, Biodiversity, and Ecosystem Functioning, *Christian Körner*, *Gia Nakhutsrishvili*, and Eva M. Spehn

Effects of Fire on Mountain Biodiversity

- Diversity of Afroalpine Vegetation and Ecology of Treeline Species in the Bale Mountains, Ethiopia and the Influence of Fire, Masresha Fetene, Yoseph Assefa, Menassie Gashaw, Zerihun Woldu, and Erwin Beck
- Is Afroalpine Plant Biodiversity Negatively Affected by High-Altitude Fires? Karsten Wesche
- The Impact of Fire on Diversity, Structure, and Composition of the Vegetation on Mt. Kilimanjaro, *Andreas Hemp*
- Effects of Fire on the Diversity of Geometrid Moths on Mt. Kilimanjaro, Jan C. Axmacher, Ludger Scheuermann, Marion Schrumpf, Herbert V.M. Lyaruu, Konrad Fiedler, and Klaus Müller-Hohenstein
- The Influence of Fire on Mountain Sclerophyllous Forests and Their Small-Mammal Communities in Madagascar, Bernardin P.N. Rasolonandrasana and Steven M. Goodman

Fire, Plant Species Richness, and Aerial Biomass Distribution in Mountain Grasslands of Northwest Argentina, Roxana Aragón, Julietta Carilla, and Luciana Cristóbal

CONTENTS

Effects of Grazing on Mountain Biodiversity

- The Biodiversity of the Columbian Páramo and Its Relation to Anthropogenic Impact, *Jesus Orlando Rangel Churio*
- Grazing Impact on Vegetation Structure and Plant Species Richness in an Old-Field Succession of the Venezuelan Páramos, *Lina Sarmiento*
- Vegetation and Grazing Patterns in Andean Environments: A Comparison of Pastoral Systems in Punas and Páramos, Marcelo Molinillo and Maximina Monasterio
- Grazing Intensity, Plant Diversity, and Rangeland Conditions in the Southeastern Andes of Peru (Palccoyo, Cusco), *Jorge Alberto Bustamante Becerra*

ORDER ONLINE AT
WWW.Crcpress.com

- Importance of Carrying Capacity in Sustainable Management of Key High-Andean Puna Rangelands (*Bofedales*) in Ulla Ulla, Bolivia, *Humberto Alzérreca*, *Jorge Laura*, *Freddy Loza*, *Demetrio Luna*, and Jonny Ortega
- Functional Diversity of Wetland Vegetation in the High-Andean Páramo, Venezuela, Zulimar Hernández and Maximina Monasterio
- Millennia of Grazing History in Eastern Ladakh, India, Reflected in Rangeland Vegetation, Gopal S. Rawat and Bhupendra S. Adhikari
- Alpine Grazing in the Snowy Mountains of Australia: Degradation and Stabilization of the Ecosystem, Ken Green, Roger B. Good, Stuart W. Johnston, and Lisa A. Simpson
- Vegetation of the Pamir (Tajikistan): Land Use and Desertification Problems, Siegmar-W. Breckle and Walter Wucherer
- Effects of Grazing on Biodiversity,
 Productivity, and Soil Erosion of Alpine
 Pastures in Tajik Mountains,
 Khukmatullo M. Akhmadov,
 Siegmar-W. Breckle, and Uta Breckle

See reverse side for continuation of contents, Other Titles of Interest and ordering information

Land Use Change and Mountain Biodiversity

Contents continued...

Effects of Grazing on Mountain Forests

Plant Species Diversity, Forest Structure, and Tree Regeneration in Subalpine Wood Pastures, *Andrea C. Mayer, Veronika Stöckli, Christine Huovinen, and Michael Kreuzer*

Patterns of Forest Recovery in Grazing Fields in the Subtropical Mountains of Northwest Argentina, *Julieta Carilla*, *H. Ricardo Grau, and Agustina Malizia*

Climatic and Anthropogenic Influences on the Dynamics of *Prosopis ferox* Forests in the Quebrada de Humahuaca, Jujuy, Argentina, *Mariano Morales and Ricardo Villalba*

Land Use Effects on Mountain Biodiversity: Socioeconomic Aspects

Conservation of Biodiversity in the Maloti–Drakensberg Mountain Range, *Terry M. Everson and Craig.D. Morris*

Effects of Anthropogenic Disturbances on Biodiversity: A Major Issue of Protected-Area Management in Nepal, *Khadga Basnet*

Agricultural Development and Biodiversity Conservation in the Páramo Environments of the Andes of Merida, Venezuela, Maximina Monasterio and Marcelo Molinillo

Multidimensional (Climatic, Biodiversity, Socioeconomic), Changes in Land Use in the Vilcanota Watershed, Peru, *Stephan Halloy, Anton Seimon, Karina Yager, and Alfredo Tupayachi*

Synthesis

Fire and Grazing — A Synthesis of Human Impacts on Highland Biodiversity, Eva M. Spehn, Maximo Liberman, and Christian Körner

The Moshi-La Paz Research Agenda on "Land Use Effects on Tropical and Subtropical Mountain Biodiversity"

Other Titles of Interest

BIODIVERSITY IN AGROECOSYSTEMS

Wanda W. Collins
North Carolina State University, Raleigh, USA

Calvin O. Qualset
UNIVERSITY OF CALIFORNIA. DAVIS. USA

Catalog no. L1290, 1998, 352 pp. ISBN: 1-56670-290-9, \$94.95 / £53.99

NORDIC MOUNTAIN BIRCH ECOSYSTEMS

F.E. Wielgolaski University of Oslo, Norway

Catalog no. PA054X, 2002, 410 pp. ISBN: 1-84214-054-X, \$109.95 / £66.99

MOUNTAIN BIODIVERSITY

A GLOBAL ASSESSMENT

Christian Körner and Eva Spehn
UNIVERSITY OF BASEL, SWITZERLAND

Catalog no. PA0914, 2003, 350 pp. ISBN: 1-84214-091-4, \$94.95 / £53.99

Please use this ORDER FORM, CALL or ORDER ONLINE at WWW.CRCPRESS.COM

Please indicate quantities next to the title(s) ordered below:

LAND USE CHANGE AND MOUNTAIN BIODIVERSITY

...Catalog no. 3523, ISBN: 0-8493-3523-X at \$109.95 / £62.99 each.

Other titles of interest

BIODIVERSITY IN AGROECOSYSTEMS

...Catalog no. L1290, ISBN: 1-56670-290-9 at \$94.95 / £53.99 each.

NORDIC MOUNTAIN BIRCH ECOSYSTEMS

....Catalog no. PA054X, ISBN: 1-84214-054-X at \$109.95 / £66.99 each.

| Ordering Information: Orders must be prepaid or accompanied by a purchase order. Checks should be made payable to CRC Press. Please add the appropriate shipping and handling charge for each book ordered. All prices are subject to change without notice. If purchasing by credit card please be sure to include the 3 digit security code that appears on the back of your card in the "sec code" field provided below. U.S./Canada: All orders must be paid in U.S. dollars. TAX: As required by law, please add applicable state and local taxes on all merchandise delivered to CA, CT, FL, KY, MO, NY, and PA. For Canadian orders, please add GST. We will add tax on all credit card orders. European Orders: All orders must be paid in U.K. £. VAT will be added at the rate applicable. Textbooks: Special prices for course adopted textbooks may be available for certain titles. To review a book for class adoption, contact our Academic Sales Department or submit your textbook evaluation request online at www.crcpress.com/eval.htm Satisfaction Guaranteed: If the book supplied does not meet your expectations, it may be returned to us in a saleable condition within 30 days of receipt for a full refund. |
|---|
|---|

| MOUNTAIN BIODIVERSITY: A GLOBAL ASSESSMENT | SHIPPING AND HANDLING | | | | |
|---|---|---------------|-------------|-------------------------|--------------------------------|
| Catalog no. PA0914, ISBN: 1-84214-091-4 at \$94.95 / £53.99 each. | Region | Delivery Time | First Title | Additional Title | For priority |
| | USA/Canada | 3-5 Days | \$5.99 | \$1.99 | mail services, |
| | South America | 7-14 Days | \$9.99 | \$3.99 | please contact your nearest |
| | Europe | 3-5 Days | £2.99 | £0.99 | CRC PRESS |
| No | Rest of World | 7-21 Days | £4.99 | £2.99 | office. |
| Name | Uisa MasterCard | American Exp | ress 🔲 Cl | heck Enclosed \$ | |
| Company/Institution | | | | Sec. Exp. Date | |
| Address | Signature and Telephone Number required on all orders Month Year | | | | |
| | Signature | | | P0# | |
| | Telephone | | | | |
| City | If you would like to receive information from us by e-mail, please provide your e-mail address below. | | | | |
| Country | E-Mail Address | | | | |

ORDERING LOCATIONS

In the Americas:

CRC PRESS

6000 Broken Sound Parkway, NW, Suite 300 Boca Raton, FL 33487, USA Tel: 1-800-272-7737 Fax: 1-800-374-3401 From Outside the Continental U.S. Tel: 1-561-994-0555

Fax: 1-561-361-6018 e-mail: <u>orders@taylorandfrancis.com</u>

Rest of the World:

CRC PRESS / ITPS

Cheriton House, North Way Andover, Hants, SP10 5BE, UK Tel (UK): +44 (0) 1264 34 2926 Tel (Int'l): +44 (0) 1264 34 3070 Fax: +44 (0) 1264 34 3005 e-mail:

(UK): <u>uk.tandf@thomsonpublishingservices.co.uk</u> (Int'l): <u>international.tandf@thomsonpublishingservices.co.uk</u>

Corporate Offices

CRC PRESS

6000 Broken Sound Parkway, NW, Suite 300 Boca Raton, FL 33487, USA Tel: 1-800-272-7737 Fax: 1-800-374-3401

From Outside the Continental U.S. Tel: 1-561-994-0555 Fax: 1-561-361-6018

e-mail: orders@taylorandfrancis.com

www.crcpress.com

1.23.06bh

CRC PRESS UK

24-25 Blades Court, Deodar Road

London SW15 2NU, UK

Tel: 44 (0) 20 7017 6000

Fax: 44 (0) 20 7017 6747

e-mail: enquiries@crcpress.com