

Geomorphological Hazards in High Mountain Areas

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CD ROMs

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How can mountain forests fulfil all the demands that are made on them? How can the interests of people living in the mountains be reconciled with those of people living in lowland areas? How can the multiple functions of mountain forests be

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Forestry web sites

The Mountain Forum

<http://www.mtnforum.org>

A recent electronic conference (April–May 1999) on “Mountain People, Forests, and Trees—Strategies for Balancing Local Management and Outside Interests” <<http://www.mtnforum.org/mtnforum/whatsnew/mpft/mpft.htm>> brought together experiences from all over the world, contributing to global knowledge of mountain forests and trees and their importance for low-lying regions.

The International Centre for Integrated Mountain Development (ICIMOD) on Forestry

http://www.icimod.org.sg/focus/forestry/for_toc.htm

There are several forestry networks in the Hindu Kush–Himalayan region formed with the support of ICIMOD as part of its mandate to encourage the exchange of successful approaches in forest management. The Hindu Kush–Himalayan Forum for Forest Conservation (HIFCOM) is a regional forum of

foresters to help communities conserve and manage forest resources. Himawanti, the Grassroots Women’s Natural Resources Management Network, is involved in organization, training, and forming of women’s groups and linking them to other women involved in natural resource management in the region. The Federation of Community Forest Groups of Nepal (FECOFUN) uses different media to deliver forestry information to the communities, such as a newsletter in Nepali, meetings and awareness campaigns, a regular radio program, and videos.

NepalNet on Forestry

<http://www.panasia.org.sg/nepalnet/forframe.htm>

NepalNet’s resources on Forestry in Nepal.

UN Food and Agricultural Organization (FAO)—Forestry Programme

<http://www.fao.org/forestry>
The site has various forestry-related resources such as directories, guides, focused discussion forums, announcements of events; a series of Information Notes, the State of the

World’s Forests reports; on-line data bases; and Unasyva, the quarterly international journal of forestry. FAO has the following on-line database: FAOSTAT forestry, forestry links database, nonwood forest products database, and media base (photos); <http://www.fao.org/forestry/FO/DATABASE/dbase-e.stm>

The International Union of Forestry Research Organizations (IUFRO)

<http://iufro.boku.ac.at/>

Provides a forum for interacting with other scientists and specialists worldwide with similar interests.

Center for International Forestry Research (CIFOR)

<http://www.cgiar.org/cifor/>

The site gives you access to publications (some in Spanish and French) and the WMC Forest Information Service, which contains maps and statistics.

The International Center for Research in Agroforestry (ICRAF)

<http://www.cgiar.org/icraf/>

Carries out research on mitigating tropical deforestation, land deple-

tion, and rural poverty through improved agroforestry systems. Has several excellent publications and is a good contact for questions related to the use of various tree species in agricultural systems. The ICRAF library, while not on-line, provides, on request, searches on AFBIB, the in-house bibliographic database, and any of the various databases available on CD-ROM. The library has web access to DIALOG, the largest database host in the world, which offers access to over 400 secondary and full-text databases; http://www.cgiar.org/icraf/inform/lib_doc.htm

Linkages—Global Forest Policy
<http://www.iisd.ca/linkages/forestry/forest.html>

Linkages is an IISD resource providing balanced, objective, and informative summaries of environment and development negotiations.

The European Forest Ecosystem Research Network (EFERN)

<http://IFFF.boku.ac.at/efern/>
Promotes coordination of forest ecosystem research and improves communication among scientists working in that field. A web database provides data of projects, research units, and experts dealing with forest ecosystem research.

The Finnish Forest Research Institute (METLA)
<http://www.metla.fi/>

Has expertise on basic and applied forest research and provides services for both private companies and governmental institutes. Maintains an extensive virtual library on forestry.

The Global Association of On-line Foresters
<http://www.foresters.org>

A web-based network that aims to increase the understanding of forestry by information exchange on current topics relating to forestry. The site contains web databases, on-line libraries, help on

request, on-line news, newsletters and journals, helpline, bulletin boards, chat lines, textbooks, reports, and publications, links, consultants' directory, details of on-line or distance learning, details of forestry jobs and career advice, web pages for children and schools.

The European Forest Institute (EFI)
<http://www.efi.fi/>

EFI has an extensive forest researchers' network across Europe and beyond. It has a research program on forest resources and information, focusing on the options for the future of European forests and value-added information for policy and decision-making.

Forest Conservation Portal
<http://forests.org/cgi-bin/texis.exe/webinator/portal>

A searchable database of a reviewed list of several hundred of the best forest conservation resources on the Internet.

Forest World
<http://www.forestworld.com/>

Information-rich site on the Internet with resources for forest industry professionals and forest landowners, including news, searchable database of over 6000 forestry industry-related sites, global forestry data, data on wood species, etc.

WRI: Forest Frontiers Initiative (FFI)
<http://www.wri.org/wri/ffi/internet>

FFI is a multidisciplinary effort to promote stewardship in and around the world's last major frontier forests by influencing investment, policy, and public opinion. The FFI team is working with governments, citizens' groups, and the private sector in Amazonia, Central Africa, Indonesia, North America, and Russia. The site contains short papers, business news, interactive forest maps, and links.

Forest Action Network
<http://www.ftpp.or.ke/fan/>

An Africa-based NGO working closely with local communities in

utilizing forest resources on a sustainable basis.

International Network on Ethnobotany (INEF)
<http://www.egroups.com/groups/inef>

Peer group of concerned foresters, scientists, international agencies, and NGOs working for documentation, dissemination, and integration of indigenous knowledge on forest management with formal forestry in various cultures and indigenous peoples across the globe. The email discussions are archived on the web at the address given above.

The CAB International (CABI) databases on the Internet

This is one of the most comprehensive international agricultural database in the world. It includes forestry abstracts (<http://www.cabi.org/index/subindex/forol.htm>) and Tree CABWeb, a service providing on-line access to CABI's three key abstracting journals in forestry, forest products, and agroforestry (<http://tree.cabweb.org/>).

NOVAGATE

<http://novagate.nova-university.org/>

A gateway to selected Internet resources in the fields of forestry, veterinary, agricultural, food, and environmental sciences, produced and maintained by the libraries of the NOVA University in five countries.

Acta Forestalia Fennica

<http://www.metla.fi/publish/acta/>
Monographs in forest science. A peer-reviewed international series covering all aspects of forest research.

The Landscape Management System (LMS) of the Silviculture Laboratory, College of Forest Resources, University of Washington, Seattle, WA
<http://silvae.cfr.washington.edu/lms>

The LMS uses GIS and stand inventory information and aims to assist in landscape level analysis and plan-

ning of forest ecosystems by automating the tasks of stand projection, graphical and tabular summarization, stand visualization, and landscape visualization. A new version of the LMS installation has recently been made available for downloading.

Global Forest Information System (GFIS)

<http://iufro.boiu.ac.at/iufro/taskforce/hptfgfis.htm>

The GFIS Task Force is developing a strategy for an Internet-based metadata system that will provide coordinated worldwide access to forest information. The system will provide multiple benefits to information users and providers such as facilitating user-friendly access to forest-related information and improving its quality and dissemination. It will take into account access to electronically and nonelectronically available information on forest resources, forest policy, criteria, and indicators for sustainable forest management, research activities, and other timely and relevant issues.

Forestry Advisers Network (CFAN)

<http://www.rcfa-cfan.org/English/info.tree.html>

The Website of the Forestry Advisers Network (CFAN) of the Canadian International Development Agency (CIDA). Its purpose is to stimulate thought on international forestry issues and to provide opportunity for Internet users to discover what development initiatives CIDA has taken to meet the challenges facing the world's forests. CFAN is an informal network of professionals concerned about the future of the forests and the people who depend on them.

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Books

Conservation Through Cultural Survival: Indigenous Peoples and Protected Areas.

By Stanley F. Stevens. Island Press, Washington, DC, & Covelo, CA. 1997. xxii + 361 pp, paperback. \$22.95. ISBN 1-55963-449-9.

Stan Stevens has put together a fine book that "explores new directions in conservation thinking and in the protected area movement" (p 4). Those new directions start from the premise that indigenous people in many parts of the world have long contributed to maintaining biodiversity and ecosystems within their traditional lands. They have done this, first, by living in ways that left their resources and environments intact and, second, by resisting outsiders' efforts to take over their lands or exploit their resources. This book provides an unusually useful combination of systematic overviews and syntheses of theory and experience with in-depth case studies of major protected areas and their regions in which indigenous peoples live and are involved in management. Throughout there are good summary and comparative tables, case-study maps, and a few well-selected illustrations. All are legible and relevant.

Conservation Through Cultural Survival contains 10 chapters in 4 parts. The first part starts with 2 background papers that review the history of the protected area movement and its relationship to indigenous peoples. These 2 introductory chapters are excellent, concise, realistic reviews of issues in the types of protected areas, the processes of their development, and the classical "Yellowstone model" of a highly protected, exclusionary enclave. The ways of indigenous peoples and their possible contributions to protected areas and conservation are

outlined without being romanticized. Chapter 2 explores newer innovative approaches to inhabited and uninhabited wilderness and to working with indigenous and other residents. This background and more conceptual discussion is followed by two case studies of new park creations (Sagarmatha National Park in Nepal by Stevens and the biosphere reserves of the Mosquitia Corridor in Honduras by Peter Herlihy).

Part 2 on comanagement and Part 3 on indigenous management present 5 case studies of some of the areas in the world best known for innovative shared or indigenous protected area management. The cases are the St Elias parks of Yukon and Alaska (Paul Sneed), Uluru and Kakadu National Parks in Australia (Terry De Lacy and Bruce Lawson), the Miskito Coast in Nicaragua (Bernard Nietschmann), wildlife management areas in Papua New Guinea (PNG) (Peter Eaton), and the Annapurna Conservation Area in Nepal (Stevens). The first 2 areas have long histories of interactions between conservation, parks, and indigenous peoples. The other 3 cases, especially Annapurna and PNG, illustrate the possibilities of starting with a new area or system from the ground up when a very different model of management (comanagement), on-going activities, and participation are possible.

It is clear that the effects of history, law, policy, and conservation management in the interactions of governments and nonindigenous and indigenous peoples create highly complex contexts and rather unique situations. The cases here are all quite detailed, although still reflecting different degrees of knowledge and engagement on the part of their authors with the regions discussed. For the areas I know best (North America and Australia), it is possible to quibble with some of the statements of the overview presented in Chapter 2 and the detailed case study in Chap-

ter 5. In Canada, for example, there are substantial differences between policy statements and practice, between land claims legislation and national parks legislation, and between different parts of the country. With a few special exceptions, notwithstanding policy statements going back 20 years and more, even north of 60°, it is only very recently that significant comanagement influence is developing for more than a very few parks. And then comanagement is due to comprehensive land claims, not national parks policy. Protected areas in the Canadian North date back to the establishment of game sanctuaries, some hundreds of thousands of square kilometers in size, in the early 20th century. Many of these were in fact strongly oriented toward meeting indigenous peoples' subsistence needs but were steadily eliminated and/or reduced in size starting in the 1950s. Change and progress are slow. The Kluane Management Board mentioned by Sneed is still limited to the southern, Champagne-Aishihik First Nations' part of the park, as the other First Nations' claims in and around the park are not yet settled. The Board is, however, taking a major role in the coordination and review processes that are part of the current drafting of a new park management plan. There has been some increase in First Nations' employment and substantial actual and expected impact in tourism facility development.

Given the complexity, the propensity for change in an unpredictable mix of fast and slow modes, and the highly location-specific nature of indigenous peoples, conservation, and protected areas experience, it is to Stevens' credit that Part 4 is such a useful summary of "Lessons and Directions." Key sections address the possible mutual benefits of indigenous peoples and protected areas, categorizations of the range of forms of interaction and involvement, specific means

and degrees of involvement of indigenous peoples, and a conclusion that highlights particularly useful and necessary approaches for promoting conservation in inhabited, protected areas.

Reform of upper- and lower-level government policy and institutions, active involvement of indigenous peoples in management activities, education and awareness activities, drawing on indigenous knowledge, and supporting indigenous land and resource use traditions and institutions are all good advice. And they are still scarce in many long-standing and new protected areas with resident or adjacent indigenous populations. Current comprehensive land claims agreements in Canada and the USA, for example, have tended to focus on specific rights, on formal management boards at some remove from on-the-ground activities, and on economic development and related opportunities rather than on knowledge, education, and learning. This book contains a great deal of well-integrated experience and advice both for starting from scratch and for "retrofitting" an existing protected area.

At the core of this book's message is the vision of "protected areas which are based on partnerships among indigenous peoples, governments, and the global conservation community" (p 265). Of course "partnership" has become a popular term in many places, but not always with positive political and economic implications. Yet indigenous peoples may be well placed and able to help ensure that partnerships are aimed at effective conservation.

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Pathways Towards a Sustainable Mountain Agriculture for the 21st Century: The Hindu Kush-Himalayan Experience.

By Robert E. Rhoades. International Centre for Integrated Mountain Development, Kathmandu, 1997. 176 pp. US\$ 20 (developed countries), US\$ 15 (developing countries). ISBN 92-9115-645-0.

This is at once an exhilarating and a frustrating book. The author's vision is wide, "to think innovatively about old problems, and to devise means of involving the very people who benefit or suffer most from development interventions: mountain farmers" (abstract). His canvas is also broad, arching across the 8 countries that share the Hindu Kush-Himalaya. For this reviewer, his most illuminating proposals are that we should reconceptualize sustainability as a process of capacity building for problem solving, that an approach to decision-making is needed in which socioeconomic and biophysical dimensions are "scaled," and that practical participatory approaches are needed that mobilize mountain communities for sustainability. Further, he rightly urges that asset-based conceptualizations of poverty (Chapter 6) and longitudinal studies of how people have managed change should occupy a stronger role in our methodological armory. This reviewer also empathizes strongly with his assertion that post-modernistic relativism and specificity are unlikely to generate new policy insights for the region.

Less convincing is the author's advocacy of "montology" or of an interactive database (MASSIF) drawing together published and "gray" materials across the range of disciplines. Many will see the proposal that his publisher (ICIMOD) should coordinate such a database as special pleading and may be further

irritated by recurrent evidence of the author's special relationship with ICIMOD, some bordering on eulogy (eg, pp 29–40), some more in keeping with a commissioned report than a book (eg, "I recommend that ICIMOD ..." [p 119]).

What of the central notion that this region should be viewed as a totality if sensible policies are to be generated? Major cross-frontier resource flows (such as silt and water from Nepal and India to Bangladesh) argue for such breadth (but figure surprisingly little in the analysis), and lessons learned in resource management in some areas may be useful to others, as Chapter 8 suggests in respect of watershed management. On the whole, however, the major differences between countries, in terms of political and economic traditions, may in practice override any potential benefits of cross-learning.

There are some surprising gaps; forestry and livestock scarcely merit a mention, despite their strong interaction with agriculture. Migration is mentioned (pp 92–93) as a seasonal strategy, but long-term out-migration is ignored. The acknowledged Nepal-basis of much of the author's information occasionally leads to overgeneralization (watershed development in India, eg, is far from donor-driven [p 119]). The book would have benefited from stronger subediting, for instance, to give meaning to the sentence on China on p 84, to rectify the "corrections" made by spellcheck, and to ensure that photographs did not carry too much detail for their small size. Overall, however, providing that they can mentally filter out excessive references to ICIMOD and the CGIAR, many readers will find this a stimulating and worthwhile read.

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Vulcan's Fury: Man Against the Volcano.

By Alwyn Scarth. Yale University Press, 1999.
xi + 300 pp. \$29.95. ISBN 0-300-07541-3.

In *Vulcan's Fury*, Alwyn Scarth presents a readable and often enthralling account of the human dramas played out around active volcanoes during 15 significant eruptions of the last 2000 or so years. Much of the material in this well-illustrated book is derived from the original sources and testimonies of eyewitnesses, in a bid to avoid the propagation of myths and errors resulting from continual reinterpretation. The *dramatis personae* span 5 continents, although the book is somewhat biased toward eruptions in Europe and the Americas, and the examples chosen exhibit the diversity of volcanic phenomena observed on Earth very well indeed.

Each chapter covers a single eruption, and most begin with a short preamble introducing the historical, geographical, and geological context of the volcano in question. The subtitle of the book, 'Man Against the Volcano,' is a fair indication of its general theme, which endeavors to describe the volcanic events as seen through the invariably untrained eyes of contemporary observers while eschewing excessive scientific explanation. As a result, particularly in the chapters covering eruptions prior to that of Mount St Helens in 1980, the narrative is strewn with colorful and entertaining prose, credited to writers attempting to describe awesome sights without the benefits of modern volcanological knowledge and terminology. However, readers expecting a detailed sociological or psychological analysis of the people that choose to live in the shadow of volcanoes may be disappointed, as the author often resorts to a straightforward chronological description of events.

The book kicks off with a brief visitor's guide to the Aeolian Island of Stromboli, which also graces the front cover. This chapter seems to have been included essentially out of reverence for the world's most persistently active volcano, and it is probably right that the story should commence in Italy, the acknowledged 'cradle of volcanology,' although there is no discussion of what first brought people to settle on the island. We remain in Italy for the subsequent 3 chapters, covering the infamous eruption of Vesuvius in AD 79 that obliterated what is now downtown Naples; the birth in 1538 of a new volcano, Monte Nuovo in the Phlegraean Fields; and the 1669 eruption of Mount Etna, during which the resilient inhabitants of Catania employed a mixture of religious fervor and inventive engineering in an attempt to divert advancing lava flows.

We then move further afield to Öraefajökull in Iceland, where subglacial eruptions have produced catastrophic meltwater floods (*jökulhlaups*) that inundate the surrounding coastal lowlands every few hundred years. Unfortunately, the *jökulhlaup* that followed the Grimsvötn caldera eruption in 1996 was probably too recent for inclusion in the book, as it would have made an interesting comparative study. Potentially the most interesting chapter is also based in southern Iceland and concerns the 1783 Laki fissure eruption. The 15 km³ of lava that spewed from Laki in that year constitute the most voluminous eruption of lava of the millennium, but the somewhat muted written response of the Icelanders precludes an accurate gauging of the human reaction to such a unique spectacle. More of the discussion is devoted to the wider climatic effects of the eruption and possible links to famine and abnormally cold winters in Europe in the mid-1780s that are still hotly debated.

Several recurrent themes common to many of the eruptions are

evident from this peripatetic volcano tour. The great suffering and resilience of indigenous populations, such as the Aetas at Pinatubo or the Tarascans at Parícutin, are clear, as is the stubborn attachment to their volcanic homelands that invariably results in the post-eruption resettlement of the devastated area. This latter trait can also be attributed to other factors, such as the increased fertility imparted to the land by nutrient-rich volcanic ash (eg, on Lanzarote after the 1730–1736 eruption), the provision of financial incentives such as exemption from taxes (eg, in Pozzuoli after the Monte Nuovo eruption), or the economic exploitation of volcanic deposits (eg, pozzuolana in Pozzuoli). Redevelopment such as this is epitomized by comparing the photograph of modern-day Saint-Pierre (p 156), in the shadow of Mont Pelée on Martinique, with its pre-1902 incarnation (p 179); they are remarkably similar, bar the additional dome atop today's volcano, although the town's population is now significantly lower.

Other common threads include the effects of earthquakes that commonly precede volcanic eruptions, which are often more damaging and distressing than subsequent events; the frequent incidence of looting in deserted towns beset by volcanic outbursts; and the increasing role of the media in 20th Century volcanic crises, from posters in Saint-Pierre in 1902 to the spread of misinformation in the Colombian national press during the Nevado del Ruiz crisis in 1985. There is also a clear distinction between the build-up to a major eruption (a time of uncertainty, panic, skepticism, fear, political wrangling, and scientific debate that may last months or even years, and the key period regarding observations and reactions of the people) and the paroxysm itself, which may be so destructive, violent, and short-lived as to prohibit any reasoned response.

The book is well written and beautifully illustrated with clearly reproduced photographs and prints, although some of these would have been better placed in chronological order to complement the progression of the narrative. Many of the photos would also have benefited from more detailed captions and an idea of scale. The maps are useful but occasionally look rough and lacking in detail, detracting from the overall quality of the book. I would also have welcomed a chapter on a Japanese eruption, such as Asama in 1783, although the author was evidently limited by the availability of detailed records. However, these are relatively minor criticisms of a book that fills a significant niche in the literature and will appeal to anyone with an interest in natural hazards or their consequences. It is a fine tribute to the observational side of volcanology, demonstrating that, while observations of volcanic phenomena have been generally good through the ages, our interpretations have necessarily evolved with the science. It also serves as a good potted history of volcanology since many of the eruptions discussed were the first of their genre in historic time and thus became paradigmatic examples that advanced the science a little further. History shows that people will always be willing to take a chance with volcanoes in return for the riches they can provide but, as the author states in his conclusion, ultimately the volcano always wins, which is why we can expect many more books of this ilk in the future.

Simon Carr

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Geomorphological Hazards in High Mountain Areas.

Edited by Jan Kalvoda and Charles Rosenfeld. Kluwer Academic Publishers, Dordrecht, 1998. 314 pp. £95. ISBN 0-7923-4961-X.

A volume examining geomorphological hazards in mountain areas would seem to be most timely, with the increased prominence given to the "Mountain Agenda" after the Earth Summit in Rio in 1992 and the ending of the International Decade for Natural Disaster Reduction. This volume was produced within the long-term research program of the International Geographical Union Commission "Natural Hazards Studies" and represents a "symposium by correspondence." It consists of 16 papers examining natural hazards in mountain chains, with some emphasis on high mountain areas. The authors come from an impressive number of countries, including Austria, Canada, the Czech Republic, Germany, Peru, Spain, the United Kingdom, and the United States.

The main topics covered are slope movements, glacial hazards, and floods in a range of mountain environments, including the Andes, the Himalayas, the Rockies, and the High Tatras. However, at least one paper appears somewhat out of place in this volume, covering salt weathering in desert environments. While there is no doubt that salt weathering can be a significant geomorphological hazard in desert environments, there is little reference in this paper to mountain areas beyond a single paragraph in the introduction. Indeed, much of the paper concentrates on data collected from the deserts of Bahrain, Dubai, and Egypt, and the conclusions seem to be more closely related to lowland areas. Thus, the inclusion of this paper seems to be anomalous and out of step with the aims of the volume.

The other papers present a range of approaches, from a sedimentological examination of glacial-lake outburst deposits to an essentially descriptive, but very interesting, review of geomorphological hazards in the High Tatra Mountains. Some of the papers represent quite significant contributions, including an examination of chaos theory for slides and mudflows and a review of Late Holocene *sturzstroms* in Montana.

Overall, the book represents a timely and interesting contribution to an important subject. The majority of the papers are relevant and topical, and the inclusion of well-reproduced photographs in addition to the generally clear maps greatly assists the reader. The editors have been careful to ensure that the volume is more than just a set of case studies, with many of the papers including theoretical work and all of them outlining the wider

implications of the research. It is unfortunate that some of the chapters are a little peripheral to the main subject. However, in general, the book stands as an excellent tribute to Professor Clifford Embleton, the founder of the IGU's Commission on Natural Hazards Studies, to whom it is dedicated.

David Petley

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From our readers

“Congratulations on a nice first issue. You’ve all done well on meeting the schedule!”

Roger Barry

Professor of Geography and Director WDC-A for Glaciology, National Snow and Ice Data Center, CIRES/WDC, University of Colorado, Boulder, Co.

“The first issue looks great; congratulations! Good balance, excellent layout, and high standards.”

Stephen F. Cunha

Associate Professor of Geography & Director, California Geographic Alliance, Humboldt State University, Arcata CA

“I just received 20.1 of MRD—what a beautiful job! Congratulations on a superb and exciting new MRD!”

Alton C. Byers

The Mountain Institute, Elkins, WV

“Let me congratulate you and Hans and your four editorial assistants, plus Allen Press, of course, for a most impressive job. The overall appearance is excellent and appropriately different, yet the continuity is also nicely evi-

dent. I think it fairly unusual for someone to let go what he considers a vital part of himself without severe withdrawal symptoms. On seeing your new issue, I am completely cured! Very many thanks, and congratulations once again.”

Jack D. Ives

Founding Editor, Mountain Research and Development

“Very effective layout...made wonderful use of the graphics I provided. I wish I had that sort of layout talent for my journal”.

Barbara Brower

Editor, Himalayan Research Bulletin Geography Department Portland State University Portland, OR

The editors are especially grateful to Hans Krenn of DUPLEX Atelier for Information-Design, Basle, Switzerland, for his help in creating the new layout design for MRD.