

### Global Mountain Biodiversity Assessment: The Mountain Biodiversity Research Network of DIVERSITAS

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The Global Mountain Biodiversity Assessment (GMBA) is DIVERSITAS' oldest international cross-cutting research network, founded in Glion, Switzerland in 1999. GMBA aims to provide the scientific basis for conservation and sustainable use of mountain biodiversity by encouraging and synthesising the often hidden and fragmented results of research on high-elevation organismic diversity, its regional and global patterns and its causes and functions. A central paradigm is that functional insight and theory will only emerge from large-scale comparisons.

GMBA intends to increase the visibility of mountain biodiversity issues:

- through engaging scientists in developing research agendas on important mountain biodiversity themes, forming a research network to tackle focused scientific questions;
- promoting standardised methodologies;
- developing a global mountain biodiversity data portal;
- undertaking analysis, synthesis and integration of activities on particular mountain biodiversity themes;
- investigating policy implications of biodiversity science by engaging in dialogues with national and international policy instruments, such as the Convention on Biological Diversity.

The GMBA office coordinates a global network of researchers, holds a database on more than 800 mountain diversity experts and publishes news and research agendas in journals. The website ([www.gmba.unibas.ch](http://www.gmba.unibas.ch)) is an important tool for informing and linking mountain biodiversity researchers and manages a list of news and events, which is updated regularly. An international Scientific Steering Committee (SSC) oversees GMBA activities and provides guidance to the programme as a whole for evaluation and endorsement of research projects in order to facilitate inter-/national funding. The GMBA office has been funded by the Swiss National Science Foundation since 2004 with a renewed grant until the end of 2010.

#### GMBA project on geo-referenced biodiversity data

In cooperation with the Global Biodiversity Information Facility (GBIF), GMBA encourages a global effort to mine biodiversity databases on mountain organisms, to build new biodiversity databases and to link them with geophysical databases, with the following activities;

- GMBA held two workshops on 'Geo-Referenced Biological Databases - a tool for understanding mountain biodiversity' in 2006 (Kazbegi, Georgia) and 2007 (Copenhagen), to show the value of openly accessible, interconnected electronic databases for scientific biodiversity research;
- A 'Research Agenda on Mountain Biodiversity Data Mining' shows exciting new research fields and questions that can only be answered using large biodiversity databases with geo-referenced data (Körner et al. 2007);
- A GMBA volume on 'Data mining for global trends in Mountain Biodiversity' (eds Spehn E M and Körner C) will be available with CRC press in September 2009;



Snow cock at kalapatthar and pumeru mountain. Photo: Suresh Maharjan.

# Initiatives

- GMBA is developing a thematic data portal on mountain biodiversity with GBIF to facilitate searches for species occurrences in mountain regions, with the aim to quantify the regional/global patterns of mountain species distribution and biodiversity;
- In order to increase the amount and quality of geo-referenced data on mountain biodiversity provided online, GMBA encourages mountain biodiversity researchers to share their data within GBIF. We offer a DarwinCore schema specifically adapted for mountain datasets (mail to: [gmba@unibas.ch](mailto:gmba@unibas.ch)).

## Other projects in brief:

- GMBA aims to document the significance of biodiversity and land use for the hydrological catchment value (BioCATCH, Alpine Biodiversity and Catchment value in a land-use context) in the Pyrenees, European Alps, the Caucasus and the Himalayas, with individual field experiments using a common protocol;
- GMBA coordinated the authors of the mountain chapter of the Millennium Ecosystem Assessment and contributed to the chapter with a synthesis of global mountain biodiversity (Körner and Ohsawa 2005);
- GMBA is one of the key organisations in developing and implementing the Programme of Work on Mountains (UNEP/CBD/COP7/4) of the Convention on Biological Diversity (CBD) by synthesizing knowledge about the biological richness of the mountains of the world and changes caused by human influence.

## References

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## Global Change in Mountain Regions: The Mountain Research Initiative

Claudia Drexler



View from Jungfraujoch shows an important part of the cryosphere of the European Alps. Photo: R. Ottersberg.

The Mountain Research Initiative (MRI) promotes and coordinates research on global change in mountain regions around the world. In its seven years of existence it has actively participated in the design of the international research agenda, as noted by the UN Secretary General in his address on Sustainable Development in Mountain Regions in August 2007. MRI's target is interdisciplinary and transdisciplinary research, but, on matters relating to biodiversity in mountain regions, MRI defers to its sister organisation, GMBA.

### First milestones

The MRI began in 2001 as a joint project by the International Geosphere-Biosphere Programme (IGBP) and the International Human Dimensions Programme (IHDP).

"Global Change in Mountain Regions - An Overview of Current Knowledge" (Huber et al 2005) was MRI's first major product. This 700 page compendium provides an overview of what is known and what directions research should take in five research areas - paleoenvironmental changes, cryospheric changes, hydrological changes, ecological changes, and human dimensions.