



The mission of the European Platform for Biodiversity Research Strategy (EPBRS) is to ensure that research contributes to halting the loss of biodiversity by 2010.

Recommendations of the meeting of the European Platform for Biodiversity Research Strategy

held under the Austrian Presidency of the EU

Vienna, 10th-11th March 2006

concerning

EUROPE'S MOUNTAIN BIODIVERSITY: RESEARCH, MONITORING, MANAGEMENT

To achieve the objectives of the European Community biodiversity strategy and the target of halting biodiversity loss by 2010, the participants of this meeting place high priority on research to:

1. assess the status, patterns and drivers of European mountain and seamount biodiversity and their dynamics at various scales of space and time, by coupling long-term monitoring and research;
2. increase understanding of mountain and seamount biodiversity, the key processes maintaining the high biodiversity on seamounts, and the impacts of human activities on long-term sustainability of mountain and seamount biodiversity;
3. define favourable states for mountain and seamount habitats and populations;
4. identify preference states for mountain and seamount ecosystems, evaluating and taking into account ecosystem services;
5. clarify the role of diversity of organisms for ecosystem dynamics, functions, and services in mountain and seamount systems;
6. build or improve regional scenarios of global change for mountain ecosystems, taking advantage of the palaeological records;
7. define criteria, indicators, methods and processes for effective conservation and sustainable management of biodiversity of mountains and seamounts;
8. understand better the governance of mountain regions to improve its effectiveness for sustainability;
9. develop cost-efficient monitoring schemes, particularly in mountain or seamount areas with difficult access, extreme environmental conditions, high anthropogenic impact or combinations of the three;
10. assess the impacts of climate change and human activities on mountain biodiversity and ecosystem services;
11. integrate socio-economic and ecological models into decision-making systems for policymakers to examine the impacts of policies on mountain land-use, conservation and biodiversity.

These research priorities were derived from the following considerations and from an analysis of the GLOCHAMORE¹ research strategy on global change in mountain regions:

- Mountains are found in all major terrestrial biomes from the tropics to the polar regions. Europe has mountains in most of these biomes, including the tropics.
- Europe's alpine environments above the tree line cover only 3 % of the continent's area, but are the centre of distribution for 20 % of all native European vascular plants.
- Mountains are characterised by steep ecological gradients, lower temperatures than surrounding lowlands, and small-scale heterogeneity in habitats, giving rise to centres of endemism and relict species, speciation hot-spots, and high numbers of species within small areas.
- Half of humanity depends on ecosystem goods and services provided by mountains. The evaluation of ecosystem services requires an understanding of local knowledge. Changes in ecosystems on mountain slopes may have significant impacts in supply of services not just in the mountains but also in the lowlands.
- Mountains are important as refugia when climate changes, for those species that can migrate upwards as climate warms. There is however no upward escape from the top of a mountain. Therefore, climate change poses particularly serious management challenges in mountain areas, and they should be used as test-beds for conservation-related research.
- Many mountain environments suffer pressures from climate change, urban sprawl, infrastructure development (such as roads, pylons, hydro-electric schemes and tourist facilities), transit traffic, airborne pollution, changes in agricultural practices (including land abandonment and activities leading to eutrophication), unsustainable tourism, the introduction of species, land tenure regimes (such as communal rights, tenant rights and access rights). These pressures can create changes in socio-economic conditions, perceptions and behaviour of local populations and mountain users and lead to conflicts between stakeholders in mountain areas.
- Seamounts are prominent features of the world's underwater topography. In the European seas, there are over 350 seamounts that rise more than 1000 m above the ocean floor.
- Seamounts are characterized by high species density over restricted areas, and by the concentration of nutrients caused by hydrological phenomena.
- Relatively few seamounts have been studied, with only about 10% having been sampled. On a global scale, their biodiversity is poorly known.
- Seamount biodiversity is threatened both by climate change, which could alter nutrient supply through modification of underwater currents, and by direct human activities, such as mining and trawling, which destroys populations of benthic species over a significant portion of the limited seamount surface.
- Long-term monitoring is a necessary part of research needed to understand slow ecological processes and dynamics, especially in mountain and seamount ecosystems with long-lived species. Attention should be paid to the maintenance and continuation of existing sites and the integration of knowledge gained from long-term ecological research sites.

¹ EU research project, see www.mri.scnatweb.ch