

International Mountain Day 11 December 2022

A note from the IUCN/WCPA Mountain Specialist Group Chair

December 11 sees us again celebrate International Mountain Day; the theme for 2022 is “Women move Mountains”

It is timely to reflect on the importance of the world’s mountains for a range of values and the contribution that women have and continue to make to their environmental protection and social and economic development.

The Importance of Mountains to the World

Mountains are particularly important for their biodiversity, their storage and subsequent provision of fresh water, and their ecological contribution to clean air. Mountains contribute to cultural diversity, and in addition to their economic importance are valued for recreational, aesthetic, and spiritual reasons. They are income sources for communities through agriculture, tourism, and use of natural resources and are important for the minimization of natural hazards and early-warning systems.

Mountain areas cover only ~25% of the world’s total continental land surface yet are home to more than 85% of the world’s species of amphibians, birds, and mammals, many of which are entirely restricted to mountains. Mountains occur in 88% of the world’s 821 terrestrial ecoregions, including half of the world’s biodiversity hotspots. Of the world’s 237 countries, 197 include mountains. Mountains play a major role in determining global and regional climates; are the source of most rivers; act as cradles, barriers, and bridges for species; and are crucial for the survival and sustainability of many human societies.

Biodiversity

Mountains have long been recognized as globally and regionally important centers of biodiversity, contributing disproportionately to the terrestrial biodiversity of Earth. This is especially true in the tropics, where they host hotspots of extraordinary richness. Given the often extreme variations of climate and topography that exist in mountains over relatively short geographic distances, mountain regions commonly exhibit high levels of both endemism and beta diversity at genetic, species, and ecosystem scales of biological organization.

Ecosystem Services

On a global scale, mountains provide the most-diverse and highest number of ecosystem services, compared to other physiographic land features. Water provision is perhaps the most critical ecosystem service provided by mountains, particularly in terms of supply to more densely populated adjacent lowlands. The great importance of mountains as sources of freshwater has justified their label as the ‘water towers’ of the world, as it is estimated that at least half of the world’s population depends on water originating from mountain headwaters. Mountains contribute disproportionate amounts of runoff to nearly all of the world’s major rivers and many minor rivers and are also a major source and storage location of groundwater.

Threats: Climate Change

Along with many other areas, mountains are experiencing acute impacts associated with climate change. Climate change is influencing mountain ecological and geosystems at a faster rate than in other terrestrial habitats globally. Due to their high sensitivity, mountain ecosystems can serve as global early-warning systems for detecting climate-change impacts.

It is also widely noted that mountains may be affected disproportionately by climate change. Biodiversity in mountains is particularly vulnerable, as many montane species are adapted to narrow microhabitats, making them less able to adjust to climatic change. Climate change challenges include shifts in the distribution and movement of montane species and ecosystems with broad-ranging consequences.

The potential medium- to long-term impacts of climate change in mountain areas are predicted to include considerable and unprecedented change to their inherently fragile ecosystems, which are likely to be further altered by various human interventions. With ongoing global changes in climate and land use, the role of mountains as refugia for biodiversity may well be compromised.

Mountain Communities and Culture

The rich cultural diversity of mountains is well known. Isolation by rugged topographic barriers has contributed to the persistence of mountain cultures, and remoteness has kept many cultures relatively intact. Mountains are part of societal metageographies that help promote and define a sense of identity that is not dependent only on isolation but also in communal protection and human/environment interactions.

As the challenges of the 21st century affect biodiversity and ecosystem services, mountains and mountain communities will need to build ecological resilience to successfully cope with changes of such magnitude. Many communities and societies rely heavily on ecologically healthy mountainous areas for their well-being.

Protecting and conserving important mountain sites for biodiversity is vital for ensuring long-term and sustainable use of mountain natural resources. Such actions may also build resilience, recognizing that in many areas the current level of protection is relatively low.

How protected are Mountains?

The world's system of protected areas includes many noteworthy areas in mountainous regions. Outside Antarctica, about 19% of mountain areas are protected globally. However, many significant mountain areas are not adequately protected. Nearly 40% of the world's mountain ranges do not contain any protected areas.

Most of the world's mountain ranges are narrowly protected and lack elevational distributions needed to preserve biodiversity. Placing protected areas to better represent and connect elevational gradients will enhance ecological representation and facilitate species migration.

These dynamic aspects indicate the need for ongoing revision of protected areas and are of particular relevance in mountain environments.

Key Biodiversity Areas (KBAs) are sites contributing significantly to the global persistence of biodiversity. As indicators of geographic priority for species-level conservation efforts, they are an indicator of global biodiversity importance. Of the 6109 Key Biodiversity Areas located in mountains, 52% are less than 30% protected, and 40.4% are completely unprotected.

There is a need to address the status and trend of natural systems worldwide and none more so than in mountain environments. Over the past two decades there has been a global trend towards degradation.

The Convention on Biological Diversity (CBD) with its 168 signatory nations has played a key role in generating conservation commitment at the global level, but the 2020 Aichi Target for protecting 17% of the terrestrial area and inland water has not been met. Current information suggests a continuation of historical declines and a need for improved conservation measures.

The 30*30 target for protecting 30% of the world's terrestrial and marine environments is currently being discussed at the COP 15 in Montreal and many countries including Australia have already signed onto that commitment. The challenge will be to get the most threatened and inadequately ecosystems protected, including in Mountains, where there are 77 mountain ecosystems identified with many poorly protected or completely unprotected.

Mountain protected and conserved areas have a key role in the application of nature-based solutions for sustainable and healthy mountain communities. There may be many reasons for their non-protection that include conflicts over resource use, cultural and community concerns about formal protection mechanisms, political tensions, or lack of political will and/or lack of an appropriate statute or other protection mechanisms. It may also involve a lack of appreciation for current values, or lack of recognition of the merits of formal protected-area status as an appropriate form of governance.

The continued focus on effectively protecting and conserving mountain ecosystems globally reflects the combined value of such systems: provision of critical ecosystem services; diverse, unique and sensitive biodiversity; unique cultural values; position as geographic icons in the landscape; and alignment with global conservation programs.

For the full paper with source references attributed to statements above see the paper accessed via on this Mountains Webpage.

“Identification of Global Priorities for New Mountain Protected and Conserved Areas”

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