

Mountain and Mountain Area

Definition

There is no universally agreed upon definition of what constitutes a **mountain** or a **mountain area**, but the criteria of the **UNEP-WCMC** ¹⁾ 2000 global delineation based on Kapos et al (2000) ²⁾ are widely used. The UNEP-WCMC 2000 global delineation uses the Digital Elevation Model (DEM) GTOPO30 of the US Geological Service that has the elevation of each square km on earth recorded in a database. The UNEP-WCMC 2000 global delineation is made up of 7 categories:³⁾

- Class 1: elevation > 4,500 meters,
- Class 2: elevation 3,500–4,500 meters,
- Class 3: elevation 2,500–3,500 meters,
- Class 4: elevation 1,500–2,500 meters and slope $\geq 2^\circ$,
- Class 5: elevation 1,000–1,500 meters and slope $\geq 5^\circ$ or local elevation range (7 kilometre radius) of > 300 meters,
- Class 6: elevation 300–1,000 meters and local elevation range (7 kilometre radius) of > 300 meters outside 23°N–19°S,
- Class 7: isolated inner basins and plateaus less than 25 square kilometres in extent that are surrounded by mountains but do not themselves meet criteria 1–6 (this seventh class was introduced in the 2002 revision of the original 2000 system) .

Background

Mountains cover about half of the European continent and about a fifth of the European population lives in mountain areas. Various demographic changes takes place in mountain areas, ranging from depopulation and aging of population to population growth due to immigration. Agricultural decline is a trend observed in many mountain areas resulting in a loss of mountain biodiversity (Mitchley et al. 2006). ⁴⁾ Many European countries and EU institutes have long used their own definitions of mountain or mountain area for planning and policy purposes resulting in a variety of definitions. In the last couple of decades, mountain areas as a policy and research unit have become more popular among policy makers and researchers world-wide (Debarbieux 2015).⁵⁾ This has also translated into mountain area specific development plans at the EU level requiring a uniform definition of mountain and mountain areas. The UNEP-WCMC global delineation was chosen as the basis for a European delineation. The UNEP-WCMC global delineation, however, was not deemed to be fully suitable for the European situation. Therefore, to include more areas with a mountainous character, the UNEP-WCMC criteria have been refined in commission of EU by the Nordic Centre for Spatial Development (Nordregio). The aim was to also include low lying mountain regions that descend to sea level such as areas in the British Isles, Scandinavia, Greece and the Iberian Peninsula. The UNEP-WCMC categories have been adapted to the European situation and additional criteria have been added (Price et al. 2004) ⁶⁾.

Typology

The European typology of mountain classes is:

- >2500 meters,

- 1500- 2499 meters and $>2^\circ$ slope within a 3 km radius or LER $>300\text{m}$ within 7 km radius or standard deviation >50 meter for cardinal points,
- 1000-1499 meters and $> 5^\circ$ slope within 3 km radius or LER $> 300\text{m}$ within 7km radius or standard deviation >50 meter for cardinal points,
- 300-999 meters with LER >300 m within 7km radius or standard deviation >50 meter for cardinal points,
- 0-299 meters standard deviation >50 meter for cardinal points.

The additional criteria are temperature contrast (includes areas with similar or harsher climatic conditions than in high alpine areas), isolated mountainous areas of less than 5 km^2 are excluded, non-mountainous areas with a mountain massif are included, and finally the mountain area was approximated to municipality boundaries (European Commission, 2004) ⁷⁾. The European delineation of mountain areas has resulted in a uniform set of criteria for defining mountain and mountain areas. At the national level, however, some countries tend to continue using their own definitions for planning and policy purposes for several reasons. These reasons are according to Price et al (84): (1), the definition of mountain may not adequately reflect national perceptions of what is a mountain, (2) the areas of individual municipalities vary greatly from country to country resulting in large differences in proportions of mountainous area and of mountain population between countries, and (3) populations are rarely distributed evenly across municipalities and the distribution is particularly uneven in and around mountain areas. ⁸⁾.

See also

Glossary

mountain

¹⁾

<http://www.unep-wcmc.org/>

²⁾

Kapos V., J. Rhind, M. Edwards, M.F. Price & C. Ravilious 2000. Developing a map of the world's mountain forests. In: Price M.F. & N. Butt (eds) *Forests in sustainable mountain development* (IUFRO Research Series 5): 4-9. Wallingford Oxon

³⁾

http://old.unep-wcmc.org/mountains-and-forests-in-mountains-2000_723.html

⁴⁾

Jonathan Mitchley, Martin F. Price, Joseph Tzanopoulos 2006. Integrated futures for Europe's mountain regions: Reconciling biodiversity conservation and human livelihoods. *Journal of Mountain Science* 3(4):276-286. DOI:10.1007/s11629-006-0276-5

⁵⁾

Debarbieux, B. , M. F. Price & J. Balsiger 2015. The Institutionalization of Mountain Regions in Europe. *Regional Studies* 49 (7): 1193-1207. <http://dx.doi.org/10.1080/00343404.2013.812784> Retrieved at 6.04.2016

⁶⁾

Martin, F. P., I. Lysenko & E. Gloersen 2004. Delineating Europe's mountains. *Journal of alpine research* volume 92(2): 75-86

⁷⁾

European Commission 2004: Mountain areas in Europe: Analysis of mountain areas in EU member states, acceding and other European countries. Brussels, Directorate-General for regional policy, European Commission

http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/montagne/mount1.pdf retrieved 4.4.2016

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Martin, F. P., I. Lysenko & E. Gloersen 2004. Delineating Europe's mountains. *Journal of alpine research* volume 92(2): 75-86

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