



## Assessment and protection of geomorphological heritage in the Gruyère – Pays-d’Enhaut Regional Nature Park (Switzerland)

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This research deals with two main issues: (1) the protection of the abiotic nature and (2) the promotion of geotourism in a protected area, the Gruyère – Pays-d’Enhaut Regional Nature Park (Switzerland). First, an identification and assessment of the geomorphological heritage is conducted, with special attention given to the degree of protection of the sites. The assessment is carried out using the method developed by Reynard et al. (2007), partly modified (addition of new criteria concerning the present use and management of the sites). Secondly, we try to understand how the stakeholders active in the tourism sector take into account the Earth heritage (especially geomorphosites). The final goal is to give some perspectives for a suitable protection and a better promotion of the geomorphosites.

The Gruyère – Pays-d’Enhaut Regional Nature Park is one of the new nature parks developed during the last decade in Switzerland. Created in 2012, it covers a surface of 503 square kilometers on the territory of 13 municipalities. It is managed by an association constituted by the 13 municipalities and by private individuals, companies and societies. The three main objectives of the park are (1) the preservation and qualitative development of nature and landscape; (2) the promotion of sustainable economic activities; and (3) raising public awareness and environmental education. The park is situated in the Swiss Prealps (altitudes ranging from 375 to 2548 m ASL) and is characterised by extensive structural landforms and numerous relicts of Quaternary glaciations.

33 sites were inventoried. Most of them (27 sites) are related to three main geomorphological processes: karst formations, relicts of glacial/periglacial processes and fluvial landforms. The other sites are related to gravity processes, to organic processes and to the structural context.

The inventory shows that the study area has a high diversity of landforms and presents a large set of geomorphosites with an important scientific value. Most of them (24 sites) have also a high ecological value. Two thirds of the geomorphosites are directly linked to the biodiversity of the region for two reasons: (1) geomorphological processes allow the regeneration of different primary species, which is the case of active geomorphosites such as scree fans or floodplains and (2) they provide a high diversity of habitats. For example, inherited sites such as relict rock glaciers or ancient rock falls have a chaotic topography and a diversity of soil formations favourable to a high biodiversity.

The majority of the sites have a good protection status and only three of them are threatened by human activities because they do not benefit of any protection. One third of the park’s area and 20 geomorphosites are under the protection of the Federal inventory of landscapes and natural monuments of national importance. This protection is, however, related more to their ecological or landscape value than to their geomorphological characteristics. An improved knowledge of this geomorphological value and a better recognition by scientists and by the society are important in order to improve the protection of geomorphosites.

### Reference

Reynard, E., Fontana, G., Kozlik, L., Scapozza, C. 2007: A method for assessing «scientific» and «additional values» of geomorphosites, *Geogr. Helv.*, 62(3), 148-158.