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Methodological approach for the assessment, protection, promotion and management of geoheritage

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During the last decade, within the framework of the Working group on geomorphosites of the International Association of Geomorphologists (IAG), a set of methods for the assessment of geomorphological heritage have been developed. All are based on assessment criteria, more or less quantitative, sometimes grouped in generic categories (intrinsic values, additional values, use values, etc.) (see Reynard, 2009 for a review). Most of these methods may be used with numeric scores, allowing the "calculation" of a site's value and the classification of geomorphosites according to their values. More recently, methodological improvements have been made in other domains of geomorphosite studies, such as cartography, the education to geoheritage, the evaluation of public needs, and the evaluation of geotourist products.

The analytical framework we propose here aims at covering all the stages of what we could name "the integrative management of geomorphosites", from the selection of important sites to the evaluation of geotourist and educational activities by the users. The work is divided into two phases: assessment; and management. The first phase is divided in two stages: the selection of potential geomorphosites; and the assessment of these sites by using a specific method developed in Lausanne (Reynard et al., 2007). The management phase is also divided in two stages: the elaboration of a management strategy (with the creation of geotourist and educational products and the elaboration of a conservation strategy); and the evaluation of the scientific work by the users.

The proposed analytical framework is tested in the Hérens Valley (Switzerland). The valley ranges from 500 m to 4357 m ASL and is rich in terms of mountain landforms (periglacial and glacial landforms, gravitational deposits, fluvial and torrential landforms). It is representative for landscape reconstructions since the end of the Last Glacial Maximum (LGM). The valley has also a rich ecological and cultural heritage. The Institute of Geography of the University of Lausanne has developed a scientific program to improve the knowledge on the geomorphology of the valley, to be carried out between 2010 and 2013 and aiming at the four following objectives: (1) improvement of scientific knowledge about geomorphological history in the area; (2) geomorphological mapping: a digital geomorphological map of a large part of the valley is currently in preparation; (3) inventory of geomorphological heritage, currently completed by using the analytical framework presented here (phase 1). The inventory is managed by a digital database and a map of the geomorphological heritage will lastly be published; and (4) geomorphological heritage promotion (phase 2 of the method). A synthesis publication about the regional geomorphology will finally be published in 2013.

References

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