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Geoheritage

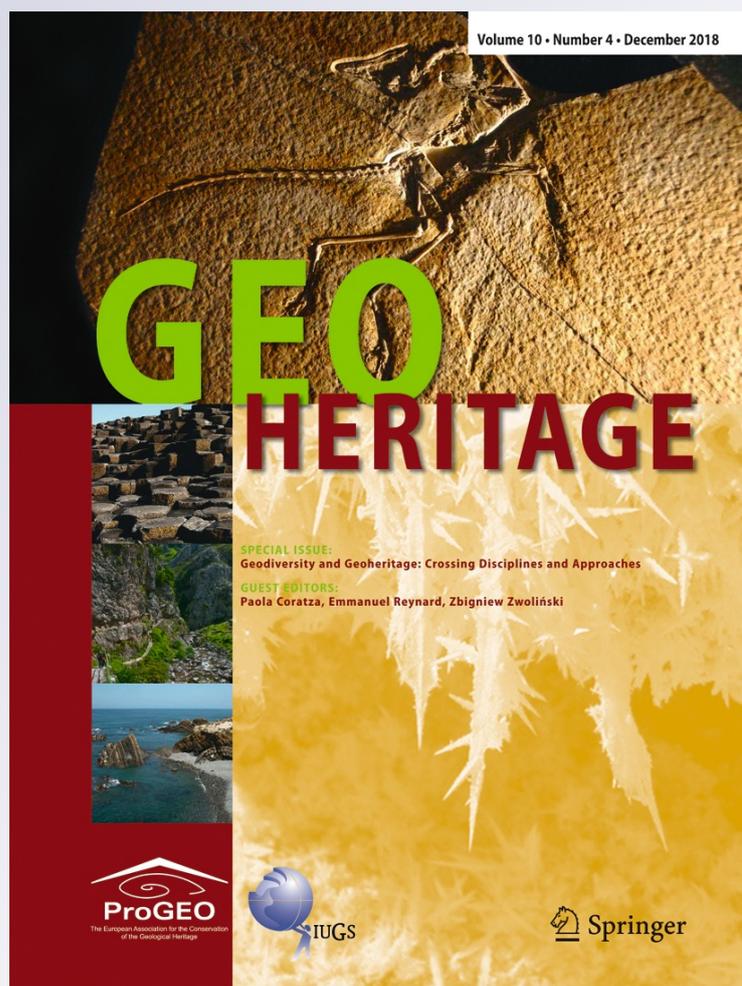
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Geodiversity and Geoheritage: Crossing Disciplines and Approaches

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In recent times, two terms, which are being used more and more frequently have been introduced into scientific nomenclature: Geoheritage (cf. Reynard and Brilha 2018 and references therein) and Geodiversity (cf. Gray 2013, 2018 and Najwer and Zwoliński 2014 and references therein). The concept of geoheritage was introduced in the 1970s (cf. Martini 1994), whereas geodiversity has been recognised as a concept worth investigating from the 1990s onwards (e.g. Wiedenbein 1993; Sharples 1995) but several recent attempts have been made to properly define and assess it (cf. Zwoliński et al. 2018 and references therein). Since their appearance, both concepts have aroused strong interest and debate, not only of researchers in Earth Sciences but also of experts in biology (e.g. Parks and Mulligan 2010; Hjort et al. 2012), spatial planning (e.g. Poiraud et al. 2016; Gordon et al. 2018; Bruschi and Coratza 2018 and references therein), general tourism (cf. Newsome and Dowling 2018 and reference therein) as well as national geotourism (e.g. Asrat et al. 2008 for Ethiopia and Migoń 2012 for Poland and references therein) and cultural heritage (e.g. Margottini 2007; Prikryl and Torok 2010; Coratza et al. 2016; Reynard et al. 2017), especially those interested in integrated and interdisciplinary approaches. This increase in awareness is testified within scientific circles by the numerous scientific conferences, workshops and sessions on geoheritage and geodiversity issues organised during

the last two decades. Worthy of note is the increasing success from 2013 of the joint session on geoheritage and geodiversity in the European Geosciences Union General Assembly, which demonstrates the importance of heritage issues to the geoscience community.

This issue of *Geoheritage* comprises nine papers presented at the session “Geoheritage and Geodiversity Matter: Themes, Links and Interactions” held in Vienna in April 2016 at the European Geosciences Union General Assembly. The papers focus on current methods of research and debates on geodiversity and geoheritage in international as well as national scientific circles, from the global to the local scale.

The four first texts deal with *methodological issues*. Clivaz and Reynard discuss the issue of inventorying the so-called invisible geomorphosites, i.e. former landforms destroyed or hidden by human activities, a key issue in highly humanised regions (such as urban areas; cf. Reynard et al. 2017) where the original geomorphology has been highly modified by anthropogenic activities. The inventorying issue is also discussed in the paper written by Mauerhofer et al., which propose an inclusive and systematic approach of protection and outreach of the geomorphological heritage based on a geomorphosite inventory in the Simien Mountains National Park in Ethiopia. The article not only describes the various steps of the inventory and the used assessment method; it also discusses the problems related to geoheritage protection in developing countries and proposes a road map for the geomorphosites management. Araujo and Pereira propose an upgrade of a method for the geodiversity quantitative assessment elaborated by Pereira et al. (2013). In particular, the authors propose to consider water-related elements as a geodiversity component, including the Water Resources Index in the set of indicators for the geodiversity evaluation. Betard and colleagues describe geodiversity and threats in the Araripe basin (Brasil), considered as a major geodiversity *hotspot* at a global scale, and propose a general approach for the assessment of geodiversity.

The following papers are related to the *interactions between geoheritage, geodiversity and cultural diversity and*

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heritage. Boukhchim et al. have carried out an interdisciplinary research, crossing geomorphological and historical/archaeological approaches, in southeast Tunisia. The paper presents a specific case of the cultural practice — cave dwellings, which is highly depending of the geomorphological context. In Romania, Niculiță and Mărgărint present a study in the Moldavian Plateau, where nine complex landslides have been selected and evaluated as geomorphosites, showing also their relations with the archaeological settlements located in the study area.

The two other papers are related to *education aspects of geoheritage and geodiversity*. Reynard and colleagues present an innovative completely free-access virtual course on geomorphosites developed and tested in six European universities, with the aim to disseminate knowledge on geomorphological heritage. The paper written by Zecha and Regelous proposes the EarthCaching as an original and effective educational tool of communicating and teaching geodiversity in German National Geoparks.

The last paper, written by Mario Panizza, is a short note which describes geosites and geomorphosites with outstanding geological and geomorphological values of Dolomites, the worldwide famous UNESCO World Heritage site.

Presented papers on the one hand expand our existing knowledge on geodiversity and geoheritage, and on the other hand show how wide is still the field to investigate more and more new challenges in the discussed problems. It is possible to express the conviction that this issue will set new directions for geodiversity and geoheritage research.

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