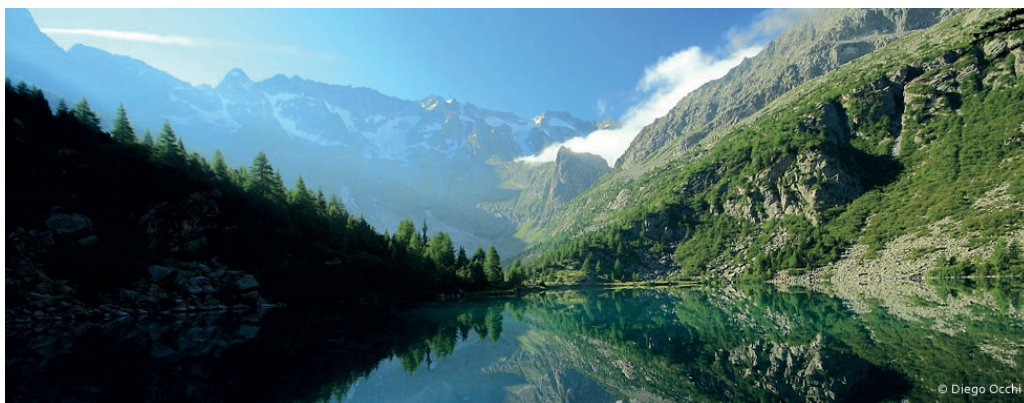




## **Alpine Resources**

**Use, valorisation and management  
from local to macro-regional scale**



## ***Conference Proceedings***

**Darfo Boario Terme**

**17-19 September 2014**

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Günter Köck and Thomas Scheurer*

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## Workshop 1-2

# How to better use and conserve the Alpine geoheritage resource?

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### Introduction

Since the late 1990s there is a renewed interest in geoheritage (geological structures and geomorphological landforms). In the Alps, as in the rest of Europe, initiatives for the assessment and conservation of geosites (= sites of geological interest) have blossomed and include national inventories and the inscription of geological sites in the World Heritage list of UNESCO (e.g., Aletsch/Jungfrau, Sardona Tectonica Arena and Monte San Giorgio, Switzerland; Dolomites, Val d'Aosta and Piemonte, Italy). The Alpine geoheritage is promoted through a wide variety of projects such as the Via GeoAlpina ([www.viageoalpina.eu](http://www.viageoalpina.eu)) and other geotourism products. The Geoparks ([www.europeangeoparks.org](http://www.europeangeoparks.org); e.g., Haute-Provence, Lubéron, Bauges and Chablais in France, Glarnerland in Switzerland, Beigua, Apuan Alps and Adamello-Brenta in Italy, Swabian Alps in Germany, Steirische Eisenwurzten and Carnic Alps in Austria, Karawanken and Idrija in Slovenia) are good examples of how this resource can be used to enhance the sustainable development of a territory.

Earth scientists have developed numerous studies aimed at improving methods for assessing and mapping geoheritage, developing tourism promotion and environmental education projects, as well as increasing knowledge regarding the links between geo- and biodiversity. However, these efforts have

seldom been co-ordinated in conjunction with tourism, educational and nature protection specialists.

### Goals of the Workshop

This workshop was proposed in order to bring together all stakeholders and institutions concerned with and interested in geoheritage (geoscientists, policy makers, territorial planners and promoters) to discuss possibilities for creating synergies to ensure the optimal use of this resource.

We wished to discuss:

- Possibilities for taking geoheritage into account in protected areas and linking it with bioheritage resources;
- Opportunities for enhancing or creating interdisciplinary research in order to improve the quality of geoheritage promotion (environmental education and geotourism).

### Format and program of the Workshop

The workshop was divided into three parts: two input speeches (2 x 20'), a group discussion (30') and a final discussion (20'). The organisers of the workshop invited two input speakers to open the workshop.

The first input talk was held by Dr. Paola Coratza, Chair of the Working Group on Geomorphosites of the International Association of Geomorphologists and permanent researcher in geomorphology at the University of Modena and Reggio Emilia (Italy). Her talk focused on the main achievements and gaps in geoheritage research. Dr. Coratza defined the concept of geoheritage, presented the main characteristics of geomorphosites, talked about assessment methods and discussed different fields of application (conservation, promotion). She also showed how geoheritage can serve as a starting point for tourist activities (for example, geotourism) or for regional development (for example, geoparks). Thanks to this input talk, people with little familiarity with this concept gained insight into the main issues of geoheritage research and the use of geoheritage as a resource.

Guido Trivellini, from the European Alpine Programme (EALP) of the World Wide Fund for Nature (WWF), gave the second input talk. He presented two methodologies for biodiversity assessment developed within the EALP. The first, based on an algorithmic approach, consists of superimposing different information layers (e.g., landcover, elevation, distribution of certain species) to define priority conservation areas. The second and participatory approach is based on expert knowledge of the area. In neither of the presented methodologies are geological and geomorphological features taken into account. Guido Trivellini gave also some examples of how geoheritage influences biodiversity, a topic that was discussed at length in one of the discussion groups.



Figure 1. Paola Coratza and Guido Trivellini, the two input speakers of the workshop.

For the group discussion, participants were divided into three groups and received a prepared statement as a starting point for their discussion (see below). Participants were encouraged to discuss the statements, to exchange experiences and to identify new means of interdisciplinary and transnational collaboration. The participants presented the main results of their discussions during the final discussion.

### Main results of the group discussions

**Statement 1: Is geodiversity as important as biodiversity? Is geodiversity only a support or a condition for biodiversity?**

Participants agreed that there is a strict link between bio- and geodiversity: “Geosites are also biosites”, “Dynamic geosites are important for biodiversity”. They also established that there are common conservation issues: “The strict link between bio- and geodiversity should be used to better manage the resource.” However, they also pointed out that biodiversity and geodiversity operate on fundamentally different time scales. Although biosites are generally perceived as dynamic and vulnerable on human time scales, geosites are generally thought of as more stable and enduring. This fact may require different conservation strategies. Furthermore, participants called attention to the fact that the valorisation of geosites may lead to negative impacts for biodiversity and that promotion activities should be carefully planned. The concept of landscape was discussed as a key element in managing both bio- and geodiversity: “By conserving the landscape, we preserve biological and geological elements”. Some geosites, especially the most active ones, are also very sensitive to climate change and could be used as key sites for enhancing awareness of environmental changes in mountains.

**Statement 2: Heritage comes from (socially recognized) crisis: The fear of losing something. Are geological features threatened? Is geoheritage recognized by society or only by specialists?**

The participants contested the statement that heritage is only derived from crisis and gave the example of establishing heritage (patrimonialisation) for economic or political reasons. However, they agreed that geological features might be exposed to natural or human threats, such as acid rain and infrastructure development (examples given by the participants). No opinion was expressed regarding

whether geoheritage should be better protected. Concerning the recognition of geoheritage, there was broad consensus amongst the participants that geoheritage is recognized almost exclusively by specialists. The younger participants expressed the opinion that older people know more about the importance of some sites and that they may consider them “heritage sites”.

A political scientist proposed considering geoheritage as a common natural resource and studying the questions related to the regulation of it as such: who are the owners, producers, distributors, and users of geoheritage? How is it managed?

**Statement 3: “Geoheritage promotion has negative impacts on highly sensitive ecosystems and should therefore not be developed in protected areas.” versus “Well-planned and sustainably designed geoheritage promotion contributes to the conservation of natural areas.”**

The third group, composed of students from a local technical high school with only basic English knowledge, had serious difficulty understanding the statement, so the discussion concentrated on the issue of what is allowed and prohibited in protected areas. Besides the prohibitions (for example hunting, construction activities), they recognized parks as territories that provide new jobs and opportunities, thanks to, for example, tourism or the marketing of local products. Consequently, we can conclude that the use of the geoheritage resource in protected areas may be beneficial for the local population. The question of possible negative impacts on ecosystems was not discussed.

### Discussion of the results and participation

The moderators were glad to see people from different age groups, professional backgrounds and countries attending the workshop. Unfortunately, the participation of specialists from the Alpine environments (as NGOs, nature protection specialists, Alpine tourism specialists) was rather poor.

The opinions of students from the local high school were particularly welcome, as they reflect a part of the “next” generation point of view. However, it is not clear if their presence was just a coincidence or if it reveals that geoheritage is becoming increasingly popular. The discussion showed that for them geoheritage is yet a rather abstract concept that only concerns specialists or older people. But they



Figure 2. Participants during the group discussion.

indirectly recognized its value for regional development. Geoheritage research and promotion should therefore not forget this specific target group. To our understanding, formal education about geoheritage mainly takes place at the university level. It may be useful to develop pedagogical units at lower levels (high, secondary or even elementary school) to help foster recognition of this kind of heritage. As for geoheritage promotion, planners should also consider this target group and offer products tailored to its needs and interests. The conservation of geoheritage, as is the case for other types of heritage, is likely to be dependent on broad social recognition.

The presence of people from different professional backgrounds enabled interdisciplinary discussions about the link between geodiversity and biodiversity and different research approaches (see above). Our impression that geoheritage is rarely considered outside the geosciences was confirmed during this workshop and its preparation. On one hand, we had trouble finding input speakers willing to discuss the specific framework and conditions under which Alpine geoheritage could be used as an economic resource (for regional development), or how it could be integrated in nature conservation strategies. People who were asked to intervene in this workshop (from both the tourism and conservation sectors) felt either insufficiently qualified or suggested that we should contact geoscientists. On the other hand, few concrete projects or methodologies concerning geoheritage were mentioned during the discussions. It was therefore a good opportunity to discuss the possibilities for taking geoheritage into account in protected areas, which was one of the goals of this workshop. A landscape approach appears to be a promising opportunity for rousing both the inter-



est and the collaboration of different stakeholders. Landscape indeed concerns various levels, from biotic to abiotic and human factors, permitting a holistic conservation approach.

### **Conclusion and perspectives**

The Forum Alpinum was a great opportunity for the Working Group on Geomorphosites to discuss the use of Alpine geoheritage resources with different stakeholders. It was important for us to better understand how this topic is perceived outside of the geosciences, and to gain a better understanding of how geoheritage can be integrated into protected area management. The workshop gave us partial answers to both these questions. We would have wished for more participation to better measure interest in Alpine geoheritage resources, especially from people in the tourism sector. Although the lack of participation may be a sign a lack of interest in geoheritage outside the geoscience sphere, it may also have been the result of an overabundance of concurrent workshops. Nevertheless, the idea of a landscape-based conservation approach, which emerged during the discussion, should certainly be developed further. The workshop was also useful for networking with inter- and transdisciplinary professionals. Although there was insufficient time to develop concrete plans for collaboration, the workshop helped us identify people who may be interested in future collaborative research efforts.

We conclude that the different stakeholder groups are insufficiently aware of Alpine geoheritage resources and that their potential is therefore largely unexploited. Disseminating the concept of geoheritage and promoting the use and preservation of this Alpine resource remain challenges. The Working Group on Geomorphosites will continue to enlarge its network to encompass a wider range of stakeholders in order to lay the foundations for future partnerships.

