

PROBLEMS OF GEOTOURISM AND GEODIVERSITY

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ABSTRACT. Early definitions of *geotourism* stressed tourism related to geology and geomorphology, though some drifted into other concepts such as education, sustainability, conservation and more. Later definitions, largely fostered by National Geographic, treat the topic as related to geography, or more simply place, and concentrate on the extraneous topics such as sustainability, conservation and so forth which should be part of any form of tourism. The earth science community is liable to lose its influence on creation and interpretation of geosites and related topics because the concept has been broadened to include everything. *Geodiversity* is a copy-cat adaptation of biodiversity, but while biodiversity might be a measure of the health of an ecosystem, the value of geological and geomorphic sites does not depend on diversity. Many geological and geomorphic features are restricted to a single rock or feature, which enhances their value. Geodiversity might be useful as a way of recording diverse features within a given area, but it should not be treated as a value-judgement on the significance of individual sites. The whole area of geoheritage is under threat from the redefinition of geotourism, and the mis-application of the concept of geodiversity.

KEY WORDS: geoheritage; geotourism; geodiversity

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1. Introduction

For many years now the geological community has been concerned about the public appreciation of sites of geological or geomorphic interest. This has been evident at least since the foundation of the first National Park at Yosemite, but in more recent years it has spawned a host of new terms such as geoheritage, geosite, geoconservation, geotourism and geodiversity. The last two in this list present problems today, as explained below.

2. Geotourism

At its simplest geotourism is tourism with some connection to geology or geomorphology. This seems self-evident, but it is necessary to take care with the definition because I think the meaning is being subverted. Margarete Patzak of UNESCO's Division of Earth Sciences wrote that 'geotourism' came into common usage from the mid-1990s onwards. The first widely published definition was that of Hose (1995):

The provision of interpretative and service facilities to enable tourists to acquire knowledge and understanding of the geology and geomorphology of a site beyond the level of mere aesthetic appreciation.

This is scarcely a definition, and geotourism is not simply the provision of facilities. Dowling & Newsome (2010, p.1) provide the following definition:

Geotourism is sustainable tourism with a primary focus on experiencing the earth's geological features in a way that fosters environmental and cultural understanding, appreciation and conservation, and is locally beneficial.

I would prefer to see this reduced to *Geotourism is tourism with a focus on the earth's geological features*. The original is full of politically-correct buzz words, and the woolly comfortable phrases play into the hands of those (described later) who are making the term almost meaningless. Later in the same paper Dowling & Newsom (2010, p. 3) offer two more definitions:

Geotourism is a distinct subsector of natural area tourism firmly entrenched in 'geological' tourism.

This suggests that *geotourism* is simply an abbreviation of 'geological tourism'. They further suggest:

Geotourism is a form of natural area tourism that specifically focuses on geology and landscape.

The stress on natural areas is perhaps unfortunate as many geological features are exposed in road cuts and quarries. The same authors point out (Dowling & Newsom 2010, p. 230) that 'Hutton's Section' in Holyrood Park is in the middle of the city of Edinburgh. The definition includes landscape, though some might consider geomorphology a subsection of geology. In an earlier book by Dowling & Newsome (2006) the wrapper says:

Geotourism is tourism surrounding geological attractions and destinations.

This is eminently simple.

Joyce (2007) suggested a working definition of geotourism:

People going to a place to look at and learn about one or more aspects of geology and geomorphology.

But geotourism is about a phenomenon, not just about people. Furthermore social research has shown that most people do not go to geosites to look and learn, but to escape and socialise. The definition of geotourism has taken a turn for the worse.

It is claimed that the concept of *geotourism* was introduced publicly in a 2002 report by the Travel Industry Association of America (in 2009 this organization changed its name to U.S. Travel Association) and National Geographic Traveler magazine. National Geographic senior editor Jonathan B. Tourtellot and his wife, Sally Bensusen, coined the term in 1997 in response to requests for a term and concept more encompassing than *ecotourism* and *sustainable tourism*. This is clearly untrue, but they may have been working independently and unaware that the word has already been coined. Geotourism is defined as: '*best practice*' *tourism that sustains, or even enhances, the geographical character of a place, such as its culture, environment, heritage, and the well-being of its residents*. There is no mention of geology or landscape. A clue comes from yet another proposed definition from National Geographic (2012):

geotourism (n): Tourism that sustains or enhances the geographical character of a place – its environment, heritage, aesthetics, culture, and the well-being of its residents.

The prefix 'geo-' is related to geography, and not in any way to geology or geomorphology.

As one writer expresses it (National Geographic 2012):

Geography –from which 'geotourism' derives– is not just about where places are. It's also about what places are. It's about what makes one place different from the next. That includes not only flora and fauna, which is the realm of ecotourism, but also historic structures and archaeological sites, scenic landscapes, traditional architecture, and locally grown music, cuisine, crafts, dances, and other arts. This new geotourism is full of

all the clichés of the environmental movement, and woolly do-good generalisations. It is claimed that: *like ecotourism, geotourism promotes a virtuous circle whereby tourism revenues provide a local incentive to protect what tourists are coming to see, but extends the principle beyond nature and ecology to incorporate all characteristics that contribute to sense of place, such as historic structures, living and traditional culture, landscapes, cuisine, arts and artisanry, as well as local flora and fauna. Geotourism incorporates sustainability principles, but in addition to the do-no-harm ethic, geotourism focuses on the place as a whole. The idea of enhancement allows for development based on character of place, rather than standardized international branding, and generic architecture, food, and so on* (Wikipedia 2012a).

This is so all-embracing that it becomes meaningless. Of course geography has its place, but everywhere on earth is a geographical location, so this use of 'geo-' tells us nothing of value. The very word *geotourism* will lose its impact, as 'environment' did many years ago. It will be a battle to retain the geological associations of the term *geotourism*. There is no court of appeal, priority will not decide, National Geographic has all the power, and in the end it will be popular usage that decides what *geotourism* means.

3. Geodiversity

Geodiversity seems to be a copy-cat word to catch the glamour of the well-established concept of biodiversity. Biodiversity is the degree of variation of life forms within a given species, ecosystem, biome, or an entire planet (Wikipedia 2012b). If we translate this to geology it is the degree of variation in geology or landforms within anything from an individual geosite to a large area such as a geopark or a National Park. There seems to be a value judgment that a lot of variety is good. Reduction in biodiversity is seen as a bad thing, and some regard biodiversity as a measure of health of ecosystems. In copy-cat style it seems to be assumed that a rich diversity in rocks or landforms is superior to one with less.

But in both biology and geology this is not necessarily true. In biology a single species may be dominant, such as *spinifex* in the spinifex

desert, or pine trees in a pine forest. But a pure pine forest is not inferior to a mixed forest, and may be regarded as superior because it is rarer. Similarly in geotourism, diversity is not necessarily a good thing. The iconic Ayers Rock (Uluru) is one of the world's best known landforms, and exhibits virtually no diversity (Fig.1). It consists of a single rock, arkosic sandstone, with strata all dipping at the same angle, with similar steep slopes on all sides that rise abruptly from the surrounding plain. In Australia a common question is "which is Australia's biggest monolith?". The answer is supposed to be Mount Augustus (Fig. 2). The question is somewhat strange as *monolith* is really an architectural term, used in archaeology and for large standing stones such as those at Stonehenge, but seldom used in geology. In fact Mount Augustus is higher and larger in area than Ayers Rock, but it is relatively well-vegetated, it includes a small area of granite and has footlopes between the steep slopes and the surrounding plain (Bourman *et al.* 2010). The greater geodiversity makes it far less impressive than Ayers Rock in the opinion of most of the world.

Many other examples around the world show that diversity is quite a redundant concept in the value of geosites. The Giant's Causeway in Northern Ireland (Fig. 3) is a renowned example of basaltic columnar lava. No extra rock types or landscape features could add to the effect. Similarly the Devil's Postpile in California is one of the world's finest examples of columnar basalt. Its columns tower 20 m high and display an unusual symmetry. Any variation (diversity) from the pure simplicity would detract from the uniqueness. Mount Fuji is a beautiful volcano of classical shape. Other features could only detract from its perfection. Mammoth Cave, the world's largest attracting hundreds of thousands of tourists, is valuable not for geodiversity but because it is



Fig. 1. Ayers Rock (Uluru), Central Australia
(Photo C. Ollier).



Fig. 2. Mount Augustus, Western Australia (Photo R.P. Bourman).

a limestone cave. The World Heritage Wieliczka Salt Mines depend for their attraction on salt, and divers other rocks would not add to the heritage status. And the list could go on, with very many great geological features that do not depend in any way on geodiversity.

Thomas (2012) in a paper mainly about geodiversity calls such features ‘singular landforms’. He wrote: *Singular landforms often come to represent wider areas of interest and become the focus of tourism*” and *“Some singular features command attention within otherwise modest surroundings.* He notes that *... exceptional (possibly iconic) landforms occurring as singular features frequently act as magnets, giving rise to unwelcome visitor pressures.* He



Fig. 3. The Giant’s Causeway, Northern Ireland (Photo Z. Preisner).

suggests that *Offering visitors a wider understanding of the topographic and geological setting can act to disperse such pressures, providing that access to viewpoint is available.* This would be nice, but in my experience it does not happen. People who want to see Ayers Rock might also visit The Olgas, but they still want to see Ayers Rock. And most tourists are not looking for a ‘wider understanding’ – they just want to visit this famous sight.

This is not to say that geodiversity is not a useful concept. In regional description it is valuable to have a list of the many and varied sites of geological and geomorphic value. It is even possible to map geodiversity, as Zwolinski & Stachowiak (2012) showed for the Tatra National Park. They also outline the procedures used in preparing geodiversity maps. Łodziński *et al.* (2009) wrote of the Sudetic Geostrada Project: *The project aims to document the diversity of landforms and the complexity of geological structure in selected parts of the Western Sudety Mts ...*, which is a worthy goal. At the broadest scale a whole country can be considered, as by Slomka (2008) who briefly describes the geology and geomorphology of Poland and wrote *The territory of Poland is geologically diversified and interesting from geotouristic point of view.* He is using diversity in its normal sense, and not suggesting that *geodiversity* has some extra technical or mystical meaning. In contrast, Urban &

Gogol (2008) use *geodiversity* as the heading for a section in their paper which is about 'geology of the region' and they could have used this term as the heading. Nothing seems to be gained by using the fashionable new word.

We might note here that like geodiversity, biodiversity has been extended. For instance Mirek (2012) wrote:

Biodiversity has become one of the key notions of the contemporary world, a measure of sustainable development, and a paradigm of modern nature protection and environmental management.

Biodiversity is not "a measure of sustainable development", and the buzz words "sustainable", "protection", "environment", and "management" should relate to any kind of use of natural features, such as tourism, and are not specific to biodiversity.

4. Conclusion

The tourist industry is beset by earnest and well-meaning people who wish to stress topics such as sustainability, protection, management, environment, culture, the well-being of residents and more. Such topics should be assumed in any tourist situation. But the inclusion of these topics in definitions of geotourism dilutes the content to the extent that the original geological purpose is lost. Indeed National Geographic (2012a) is proposing a definition of *geotourism* that includes no mention of geological or geomorphic content. With *geodiversity* the geological community is suffering a self-inflicted wound by suggesting that a place with a variety of geological features

is somehow superior to one based on a superb example of a single feature.

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