ABSTRACT: The City of Segovia is, due to its rich and varied historical and artistic heritage, a first order place for the welcoming of tourists, from all over the world. Segovia also offers Geotourism due to their extraordinary geological heritage, with almost one hundred Geosites that can be used as an other tourism resource. The City Council promotes Geotourism as a quality complement to traditional tourism, and even, an innovative and sustainable alternative for all public.

KEYWORDS: Geotourism, geological heritage, geosites, tourism, Segovia.

1. INTRODUCTION: GEOTOURISMA STANDARD ECONOMIC AND CULTURAL ACTIVITY

Although there is no internationally accepted definition of the concept of Geotourism, according to Newsome & Dowling (2010), “Geotourism is another form of nature tourism that is specifically centred on the geology and the landscape. It promotes a sustainable tourism to Sites of Geological Interest (Geosites) and it fosters knowledge of Earth Sciences through appreciation, enjoyment and learning. This is accomplished through visits to geological features; the use of georouteing and itineraries with observation points; guided tours, geological activities and visits to geological visitor centres”. An effort is detected in the recent years by geologists and public administrations to promote and disseminate the geological and palaeontological values of a certain region as a key for touristic development (Moreira et al., 2008). Geotourism is looking for the integration of Geology and geological heritage management, including geoconservation, within the touristic programs, in order to make the relevant points of geological heritage a part of touristic products (Hose 1997, 2000; Nieto et al., 2006; Parisi, 2010). Other definitions of the term geotourism recognise that it deals with tourism, through the promotion of geological heritage, that entails a sustainable development of the local community in which it is implemented, with a regard for their culture, traditions and customs but without interfering with their daily way of life (Global and European Geopark Network).

The actuality is that there are no reliable statistics for the volume of economic activity and
movement of people that supposes a worldwide or national scale. However, the Spanish reality shows that the places most visited by tourists in Spain are not from the historical or artistic heritage domains, as might be the Prado Museum (2.8 million visitors in 2009) or the Alhambra in Granada (3.1 million visitors in 2009). The most visited place in Spain is the Teide National Park (3.2 million visitors in 2009), where principal components are the volcanoes and the geological landscapes they created. Significant sites are also recorded for other Geosites, such as: la Ciudad Encantada [the Enchanted City] (Cuenca); el Torcal de Antequera (Málaga); la Pedriza del Manzanares (Madrid); la Cueva de Nerja [the Caves of Nerja] (Málaga); and el Monasterio de Piedra [the Stone Monastery] (Zaragoza), to name a few. Therefore, when the geological heritage is truly exceptional, it represents a tourism resource of the first magnitude for those places which, on many occasions, lack other attractions as an engine for development.

2. CASE STUDY: THE GEOLOGICAL HERITAGE OF THE CITY OF SEGOVIA AS A GEOTOURISTIC RESOURCE

The most singular features of the geological heritage of the City of Segovia had already been catalogued, in an unfledged form, in a preliminary list of Sites of Geological Interest (Geosites) conducted at the Provincial level (Díez, 1991). Subsequently, these Geosites were rated using standardised criteria along with the rest of the said inventory (Vegas, 2000); and in a more detailed form for the municipal area of Segovia, in the context of the revision of the General Urban Regulation Plan; and in the Territorial Regulation Directives for Segovia and its environs; and rules have even been published for its geoconservation. In this sense, about a hundred Geosites have been identified, catalogued and assessed in the city of Segovia and its environs, many of them being of regional or national interest, implying an educational resource of huge didactic potential for the devising of thematic itineraries which exploit those from the very old (Gila, 1897) to those of recent times (Díez-Herrero et al., 2010; Díez-Herrero & Vegas, 2010 & 2011; Martín Moreno et al., 2010).

The Geosites catalogued may be grouped into 16 geological frameworks that cover practically all types of place, from outcrops of metamorphic, igneous and sedimentary rocks, to paleontological and mineralogical sites, up to moveable geoheritage (museums and collections) and tectonic structures, *inter alia* (Ayuntamiento de Segovia, 2005; Díez-Herrero & Vegas, 2010 & 2011); they also cover a range of eras from the Proterozoic (> 600 million years) to the Quaternary. In contrast to the spatial concentration of the historic and artistic places of interest within the walled area of the City of Segovia and its surrounding district (outskirts), the Geosites are spread throughout the urban area and its surroundings. In addition, the Geosites can be visited at any season of the year and at any time of day, as they lack the seasonality of other tourist spots and conventional tourist typologies.

3. THE REALITY AND POTENTIAL OF GEOTOURISM IN SEGOVIA

Despite the incipient development of geotouristic activities in Segovia, it is already possible to list some infrastructure and initiatives that have been developed in recent decades:

I) Current infrastructure for geotourism in Segovia City

- Museums, collections and visitor centres: among those which stand out are the collections of minerals, rocks and fossils of the Academy of Artillery, considered the oldest documented in the World (Díez-Herrero, 2005); the 18th century Lapidary marbles collection of the Cathedral; the 19th century collection of minerals at Secondary School of Segovia; ‘Room A’ dedicated to Geology of the Museum of Segovia; the Los Molinos Centre (Caja Segovia) and the La Zarzuela
classroom (situated on Nueva Segovia abandoned quarry).
- Information panels and posters: located along the Eresma Nature Trail, in the Zarzuela quarry, on the Los Molinos path, and in several wall along Cervantes Street (at the gate of Cervantes 17 and Quintanilla Lingerie store) that are situated close to the Upper Cretaceous rocks.
- Information resources: in addition to the numerous publications in print, a dynamic, modern webpage is available (www.geologiadesegovia.info) with a high consultation hit-rate.

ii) Initiatives underway to exploit geotourism: there are essentially two routes that are made periodically available to the general public as guided tours: Visit our tropical seas and the roots of the mountains: A geological route through Segovia” (Segovia Tourism; Martín Moreno et al., 2010) and “The big risk: coexisting with everyday geological disasters.” (Díez et al., 2007-2010); However, several other routes have been implemented, notable among which is “A journey of 600 million years”, held to mark the Geolodía [Geology Day] 2010 (Díez & Vegas, 2010). New hiking routes also include geological aspects, such as the Los Molinos Path or the trip from the Aqueduct to the Azud [Weir]. Furthermore, recently, the municipal company “Segovia Tourism” has created a specific section designated “Segovia Natural” (segovia.natural@turismodesegovia.com), to unify all the initiatives for hiking, nature activities, geotourism, etc.

However, if geotourism in Segovia is still more of a promise than a reality, given its modest size in comparison to the historic, artistic and gastronomic tourism, in the future it is planned to implement further infrastructure and a series of activities to conspicuously include:
- The publication of new guides and specially printed leaflets published by the Tourism Department of Segovia City Council; among which one is entitled “From rock to rock: Discover the geological heritage of the city of Segovia” (Díez & Vegas, 2011);
- The design and development of 12 new geotourism itineraries – thematic, chronological and spatial – adapted to the disposition profiles of potential visitors. A bike route through the city, to make use of the City Council’s existing cycle hire scheme, will also be designed.
- The installation of information boards in some of the most visited Geosites (the Calle Real, the Eresma and Clamores valleys...) and the replacement and updating of existing ones, some of which have been stolen or suffered acts of vandalism;
- Maintaining and updating the Web page, and new specific Web pages, with the participation of internet users through their views and information (WikiSegoGeo);
- The inclusion of geological content in the tourist audio guides and development of applications for mobile phones (augmented reality, iPhone apps) and GPS navigators;
- Training courses for official tourist guides, both on the basic foundations of the geological heritage and their use by tourists, as well as Segovia’s Geosites and itineraries;
- Promotion as a venue for geological conferences and excursions, to be facilitated through the efforts of the Segovia Convention Bureau office; the celebration of national and international scientific meetings and as a stopover destination for university fieldtrips, conferences and secondary education centres.

3. CONCLUSIONS

The City of Segovia, declared as World Heritage Site by UNESCO in 1985, is, due to its rich and varied historical and artistic heritage, a first order place for the welcoming of tourists, from all over the world, as well as for its traditional gastronomy. It is less known that, for its geographical location
and its long geological history, it also has an extraordinary geological heritage, with almost one hundred Geosites catalogued, inventoried, assessed, ranked and legally protected that is planned to used as geotourism resource. For the exploitation of geotourism activities, there is already a certain infrastructure, planned itineraries and routes, along with other activities in progress (www.geologiadesegovia.info). However, it is intended, in the near future, introduce new initiatives – audio guides; augmented reality applications for mobile phones and GPS receivers; training courses for tour guides; specific tourist leaflets; the promotion as a venue for geological conventions and as a destination for excursions, etc. – which can turn geotourism in Segovia into a quality complement to traditional tourism, and even, at certain times of the year and in certain areas of the city, as an innovative and sustainable alternative.

**Acknowledgements**

*We are very grateful to the entire group of Segovian geologists, who have selflessly spent decades contributing with initiatives and materials for the promotion of the geological culture of our city. We are equally grateful to all the staff of the municipal company “Segovia Tourism”, the Visitor Reception Centre and the Department of Heritage and Tourism of Segovia City Council.*

**References**