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International
ProGEO
Symposium

Abstract Book

BUILDING CONNECTIONS FOR GLOBAL GEOCONSERVATION

Editors: G. Lozano, J. Luengo, A. Cabrera
and J. Vegas



Building connections for global geoconservation. X International ProGEO Symposium
Ministerio de Ciencia e Innovación
Instituto Geológico y Minero de España
2021
Lengua/s: Inglés
NIPO: 836-21-003-8
ISBN: 978-84-9138-112-9
Gratuita / Unitaria / En línea / pdf

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Ríos Rosas, 23. 28003 MADRID (SPAIN)

ISBN: 978-84-9138-112-9

10th International ProGEO Online Symposium. June, 2021. Abstracts Book.

Editors: Gonzalo Lozano, Javier Luengo, Ana Cabrera and Juana Vegas

Symposium Logo design: María José Torres

Cover Photo: Granitic Tor. Geosite: Ortigosa del Monte's nubbin (Segovia, Spain). Author: Gonzalo Lozano.

Cover Design: Javier Luengo and Gonzalo Lozano

Layout and typesetting: Ana Cabrera

ELIGES: scientific criteria for selecting 10 areas of urban geosites for environmental awareness and geotourism in Segovia (Spain)

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Keywords: assessment criteria, environmental awareness, geotourism, urban geosites, Segovia.

Introduction

Segovia is a small historic city in the center of the Iberian Peninsula (Spain) that has developed various pioneering initiatives around the geoheritage in the last 30 years (Díez-Herrero et al., 2019). Even as a World Heritage City since 1985 by UNESCO, natural heritage is another resource for socio-economic development. In this city, four main phases of geoheritage research have been carried out: i) inventory, mapping and general assessment of more than one hundred geosites of local relevance; ii) legislation, with the protection of the geosites in the Territorial Planning Guidelines and Local Urban Planning; iii) geoconservation, including citizen participation initiatives such as ‘Save a Rock’, the manifesto ‘Rocks in the city’ or allegations of potentially damaging projects for geoheritage conservation; iv) public use, both for outreach (guides and brochures such as the ‘From rock to rock’, urban geo-routes, augmented reality applications, etc.), as an educational resource because it is a natural laboratory for formal and informal education in the city (‘Segovia educates in green’ programme or the ‘Science Club’ for primary schools) and for geotourism (geo-routes interpreted in the ‘Discover Segovia’ programme, training of local tour guides, etc.).

The geoheritage, as part of the natural heritage, has great potential for environmental education in sensitive key areas such as climate change, natural hazards, pollution and groundwater, raw materials, health & wellness among others. The urban geoheritage, with respect to the rural environment or the geoheritage in protected natural areas, has the strengths and opportunities of being more accessible, attracting a greater number of people and generating greater links with the historical heritage and with material and intangible cultural elements. Social changes, the concentration of the population in cities, the increase in mobility and the time dedicated to leisure means that society and citizens are demanding recreational spaces and natural areas in the urban environment.

In Segovia, the relationship between the geological and the historical-artistic heritages is highly remarkable, through the location of the quarries from which the raw materials were extracted, the traditional trades, the foundations of monumental buildings, and even legends, children's stories and miraculous events with a geological background. In addition, geosites location makes them easily accessible and they have strong emotional relationships for people as they have been the settings for games in parks, squares and streets. In counterpart geoheritage in cities is more fragile and vulnerable as it is subjected to greater human pressure and impacts. Pollution, the pressure of urbanization, in short, the occupation and management of public spaces, demand the promotion of best practice guidelines to guarantee geosites conservation and the legacy for the future. The City Council, as a key stakeholder in the management of urban geoheritage and through the call for grants from the II Environmental Education Strategy of the Castilla y León regional Government, obtained financing in 2018 and 2019 for the development of the actions for implementation of geoheritage in environmental education and geotourism.

Methodology

These educational and touristic actions (Figure 1) have consisted of: a) new assessment of the 110 urban geosites to identify the Top-10, with six specific criteria (based and improved the proposal of Suzuki & Takagi, 2018) for the different stakeholders (people with disabilities, visitors, teachers and students of all educational levels, senior citizens, etc.), called ELIGES (acronym in Spanish of ‘Areas of geosites for environmental education in the city of Segovia’); b) the edition of the book “Best practice guidelines

for the use of the geoheritage in the city of Segovia” (Vegas & Díez-Herrero, 2018), in Spanish and English, in print and in digital format, addressed to all social agents involved in the management and use of urban geoheritage, from municipal technicians to neighborhood associations; c) special brochures for each ELIGES; d) development of a municipal website dedicated to the 10 ELIGES with records for teachers and other educational resources (<http://www.segovia.es/educapatrigeo>), containing multiple didactic resources; e) installation of small panels in tiles with QR codes in the 10 ELIGES that give access to the contents of the website; f) a practical course for secondary school teachers for learning to take advantage of all these resources.

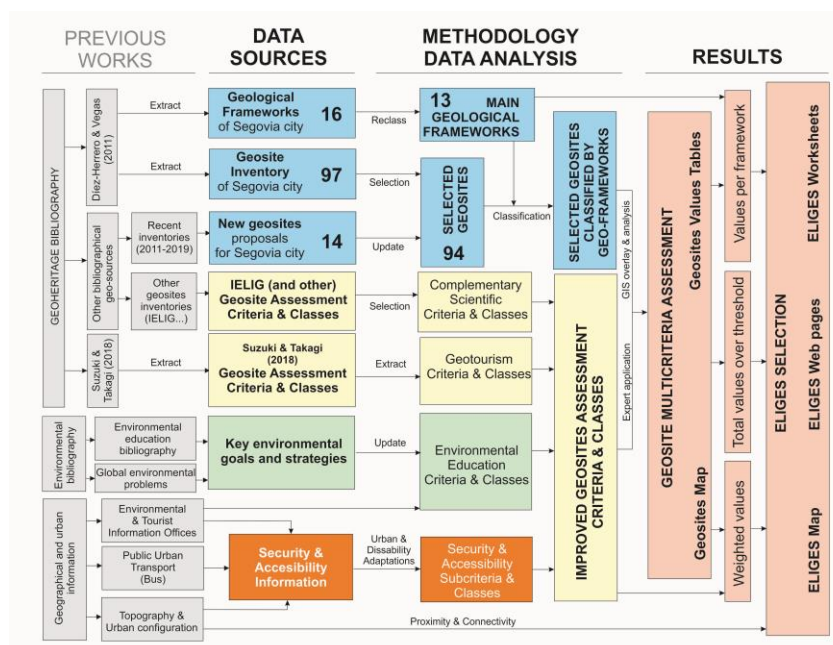


Fig. 9. Methodological general scheme of this study, from data sources and previous works, to the final results. In: Vegas & Díez-Herrero (2021).

Results

The results of these actions have been high satisfactory both, in a didactic and informative scope, because several schools and teachers are using the generated resources, as the successful didactic program “ELIGE un LIG” (“Choose a geosite”; Sacristán-Arroyo et al., 2021); and for their repercussion in media (local newspapers, blogs, and high number of visits to web page) and social networks. So, the objectives and aims of this initiative could be considered reached.

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