

Proceedings

of the

11TH **EUROPEAN GEOPARKS CONFERENCE**

19 > 21 September 2012
Arouca Geopark
Portugal

smart

inclusive

sustainable

growth

EDITORS

*Artur Abreu Sá
Daniela Rocha
Alexandra Paz
Vânia Correia*

References to this volume

It is suggested that either the following alternatives should be used for future bibliographic references to the whole or part this volume:

Sá, A.A., Rocha, D., Paz, A. & Correia, V. (eds.) 2012. *Proceedings of the 11th European Geoparks Conference*. AGA – Associação Geoparque Arouca, Arouca, 319 pp.

Zouros, N. 2012. Measuring progress in European Geoparks: a contribution for a smart, sustainable and inclusive growth of Europe. In: Sá, A.A., Rocha, D., Paz, A. & Correia, V. (eds.) 2012. *Proceedings of the 11th European Geoparks Conference*. AGA – Associação Geoparque Arouca, Arouca, 5-6.

All papers in this publication were presented during the
11th European Geoparks Conference

All abstracts were submitted to peer review by two referees.
Refereeing has been extended by editors to typographical errors
or to graphic quality as far as this was possible.

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Rua Alfredo Vaz Pinto
4540-118 Arouca – Portugal
Phone/Fax +351 256 943 575
www.geoparquearouca.com
geral@geoparquearouca.com
ISBN 978-989-96055-6-5
Legal Deposit 349118/12

Impressão e acabamento: Gráfica M. Vide



11th European Geoparks Conference 2012
Arouca Geopark, Portugal, 19-21 September 2012

Organized on behalf of the European Geoparks Network by the Arouca Geopark and the Municipality of Arouca

Under the auspices of



United Nations
Educational, Scientific and
Cultural Organization



CAJÓN DEL MAIPO GEOPARK PROJECT: PRELIMINARY STUDY

J. Benado^{1*}, M. Schilling² & J. Brilha³

¹ Earth Sciences Centre, University of Minho, Portugal

² Servicio Nacional de Geología y Minería, Santiago, Chile

³ Earth Sciences Centre, University of Minho and Geology Centre of the University of Porto, Portugal

*josebw@gmail.com

Keywords: *Geopark, Chile, Cajón del Maipo*

The Cajón del Maipo is a well-known tourism destination located in Central Andes, 50 km from Santiago, the capital city of Chile (fig.1). This area is visited by national and foreign tourists and is part of the San José de Maipo county, which has an area of 4995 km² and about 13,500 inhabitants, contrasting with the nearly 6.5 million people living in the Metropolitan Region of Santiago. San José de Maipo is a semi-rural county with an unemployment rate of 9.7% (2009 data). With 11.1% of its population living below the poverty line, San José de Maipo is economically depressed compared to the neighbouring counties. The major economic activities of this area are mining, electrical energy production, livestock and agriculture. However, the Strategic Plan of the Province considers San José de Maipo a county with high potential for ecotourism, nature and environment and establishes tourism as the most promising development activity.

This county borders Argentina to the east with the boundary corresponding to the modern volcanic arc that includes active volcanoes such as Tupungatito, Marmolejo and San José. In this mountainous landscape there are peaks with altitudes ranging from 800 m (La Obra) to 6,570 m (Tupungato Volcano), and nine peaks rising over 5,000 m. The Cajón del Maipo is the name given to this valley, which has been formed by the action of the Maipo River. With a hydrographical basin with an area of about 5,000 km², the Maipo River is the main source of water for the capital. The rocks of this region record about 200 million years of geological history and a wide geodiversity including marine Jurassic rocks, volcanic and plutonic rocks of the Cenozoic, folds and faults that show intense tectonic activity, volcanoes, hot springs, glaciers, mineral deposits, and Holocene sedimentary deposits of fluvial, glacial, volcanic, and gravitational origin. Extensive research and investigation has been carried out on the geology of this area, especially since 1957, when the development of geology in Chile begins with the creation of the School of Geology at the Chile University and the Institute of Geological Research.

In terms of climate, the city of San José de Maipo, which is the county's capital and most populous urban centre, is characterized by winter rains, temperatures that can range from 0-30°C depending on the season, and a dry season that lasts between 7-8 months. Above 3,000 m there is a mountain climate with precipitation in the form of rain and snow. Ecosystems in the area are known as "Forest and Andean Mediterranean scrub" and "High Andean Steppe". Both are characteristic of the high mountains of the Andes in central Chile, and are now seriously threatened, so there are great efforts made for their conservation. The public-private initiative called "Santiago Andino" stands out as one of these conservation efforts covering 76% (3,779 km²) of San José de Maipo county and aiming to conserve, restore and protect ecosystems. This territory was declared a hunting-forbidden area.

There are two protected areas in the county. The first one is the "National Monument El Morado", a park under public administration with an area of about 30 km² located in altitudes of around 5,000 m. The main attractions are its high peaks, the San Francisco Glacier and its moraines, the San Francisco Lagoon, and its proximity to the Morales hot springs. It has a great diversity of flora and fauna, much of it native and some endangered species. The second protected area is the "Santuario de la naturaleza Cascada de las Animas", an area under private management with an area of about 36 km². It is known for its steep gorges and waterfalls, where thick and intensely folded Miocene volcanic successions can be observed. This area is also a shelter for flora and fauna.

Additionally, the county of San José de Maipo boasts great cultural and archaeological interest. To mention a few, we highlight two areas already included in the Tentative List for World Heritage of UNESCO. The first one is the "Qhapaq Nan" or "Main Andean Road", an international initiative of Argentina, Bolivia, Chile, Colombia, Ecuador and Peru, which aims to preserve one of the most representative works of Incan culture: the road network. Part of this road network can be seen in San José de Maipo county, which ends at the "Santuario de Altura del cerro El Plomo", the second area included on the list. This is the southernmost Incan ceremonial and religious site, located at 5,200 m height.

The aim of this study is to estimate the potential of Cajón del Maipo for an eventual creation of a geopark. As a first step, an inventory of the geological heritage of the county will be made as part of a thesis project of the Master's in geological heritage and geoconservation at the University of Minho, Portugal.

Besides the outstanding geology of the "Cajón del Maipo Geopark Project", the following conditions and attributes may justify its creation: i) There are more than 6 million people as potential visitors within a radius of 50 km; ii) The county has already a tradition of ecotourism, with common activities like skiing, climbing, rafting, mountain biking, fishing, camping, hot springs and outdoor walks; iii) There are important conservation initiatives in the territory, especially dedicated to its biological component; iv) The National Tourism Service of Chile (SERNATUR) declared in 2001 San José de Maipo county as a "National Zone of Tourism Interest". This classification commits the government to promote the sustainable tourism development in the area, the stimulation of productive activities related to tourism, the protection of natural and cultural resources, among others; v) Despite being a country influenced by its geological features (mineral deposits, volcanic and seismic activity, tsunamis, etc.), the level of Earth Sciences education in Chile is quite low. Thus, the establishment of a geopark near the capital, where about 40% of the population lives, could involve the community in educational activities related to the geosciences and encourage a more harmonious cohabitation with the environment.

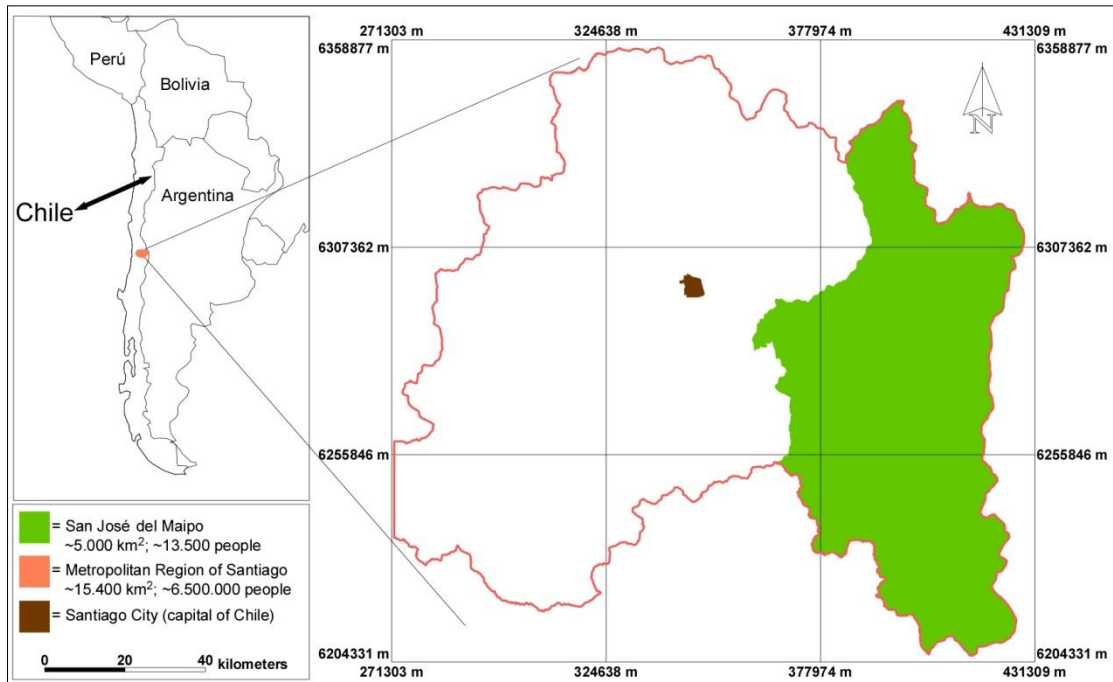


Figure 1. Location of San José del Maipo county (central Chile).