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PROCEEDINGS OF THE INTERNATIONAL CONGRESS OF GEOTOURISM AROUCA 2011

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DANIELA ROCHA
ARTUR SÁ
[COORDS.]



Recife's beachrocks: an example of a geosite with high geotourism relevance in northeastern Brazil

A. M. F. BARRETO – alcinabarreto@ufpe.br (University Federal of Pernambuco, Geology Department)

J. B. R. BRILHA – jbrilha@dct.uminho.pt (University of Minho, Earth Sciences Department)

H. M. B. ASSIS – hortencia@re.cprm.gov.br (Serviço Geológico do Brasil - CPRM-Recife)

ABSTRACT: In Recife, northeastern Brazil, beachrocks were formed after the last marine transgression and have today a scientific, educational, historical and tourism relevance, constituting a geosite. This geosite, located near the old Recife city centre and close to very popular beaches, is already used in the tourism iconography of the city and the state. Besides its relevance and anthropogenic threats, no management strategy is presently guaranteed to this geosite. This work aims at the promotion of this geosite interpretation, its conservation and proper use by different types of public.

KEYWORDS: Geosites, Beachrocks, Geotourism, Brazil.

1. INTRODUCTION

This geosite is located on the coastline of Recife, the capital of the state of Pernambuco, northeastern Brazil (figure 1).

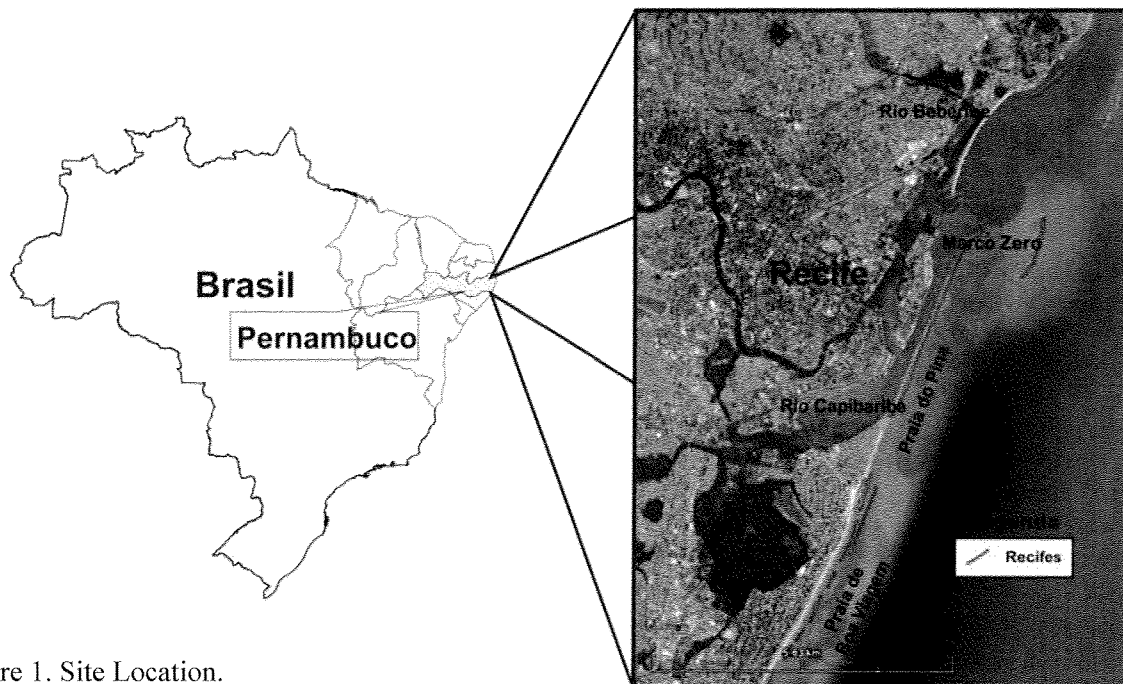


Figure 1. Site Location.

The geosite lies along the area between the harbour of the old city centre and Pina and Boa Viagem beaches (8°04' - 8°08'30" S; 34°51'30" - 34°54'25" W), forming two aligned sandstone bodies cemented by calcium carbonate (beachrocks) parallel to the coastline. The southern rocky body extends along 4 km and is highly visited by tourists in Pina and Boa Viagem beaches due to the natural pools formed during low tides and to the proximity of hotels (figure 2).



Figure 2. Beach rock on Pina Beach, exposed during the low tide.

The northern rocky body is located near the old city centre and close to Recife's harbour (*Marco Zero*). It is well exposed even during the high tides.

The aim of this short paper is to demonstrate that besides scientific, historical and educational relevance, this geosite has also good potential for geotourism use.

2. GEOSITE VALUES AND PROTECTION STATUS

This geosite has had a long history of scientific research since the beginning of the 20th century (Branner, 1904; Ottman, 1960; Mabesoone, 1964; Assis, 1990; Chaves, 2000; Barreto *et al.*, 2008; 2010). The outcrops are constituted by shelly sandstones and conglomerates cemented by calcium carbonate (beachrocks) with low-angled cross beddings dipping towards the direction of the actual beach. The interpretation of these beachrocks is related to an ancient coastline formed after the last marine transgression (± 5500 years BP), when the sea level was at least about 1 meter higher than today.

The historical importance of this geosite dates back to the time of the discovery of Brazil by Portuguese sailors as its morphology as rocky ridges exposed during high tide allowed the easy docking of boats. Therefore, Recife harbour was considered the most important harbour of South America during most of the 17th century (between 1630 and 1700). These rocks were also in the origin of the name of the city: "ár-raçif" (meaning "pathway" or "sea trail" in Arabic), "Reefs of the ships", "Harbour of Reefs", "Marine Riverside of Reefs" and, finally, "Recife" (meaning reef in Portuguese). Hence, the cultural value of this geosite is clearly justified.

This geosite also has high value under the educational point of view. It is possible to have several geological contents explored by secondary school and university students, especially in what concerns geomorphology, stratigraphy, palaeontology and palaeoenvironmental considerations. In addition, the good accessibility and safe visiting conditions are key elements to support the educational use of this geosite.

Finally, this geosite is already used in the touristic iconography of both city and state, mainly for its scenic singularity. The potential number of users of this geosite is very high, not only based on the more than 2 million Recife's inhabitants, but also due to the significant number of national and international tourists that benefit from a well-established network of hotels and other touristic attractions.

In spite of all those values, the beachrock geosite has been suffering some anthropogenic threats along the centuries, mainly due to the development of several infrastructures, namely: work to facilitate the ship dockings, a 17th century fortification, a 20th century "Casa de Banhos" (presently a bar), and a "Sculpture Park" (commemorations of the 500 years of Brazil's discovery). Presently, a new project of urban requalification has begun under the municipality coordination, but no direct protection measures are being implemented.

3. FINAL CONSIDERATIONS

Due to its geological, historical and scenic relevance, the beachrock geosite should be protected and used for several purposes. Its management should assure adequate conservation and proper diffusion to local public and tourists. Nevertheless, up to now no educational or touristic activities have been organized in this geosite. Barreto *et al.* (2010) have proposed some interpretative panels for the site in order to explain its geological and historical importance, but final authorisation from the local administration is still missing.

The interpretation of geological heritage is already a reality in some Brazilian states such as Bahia, Rio Grande do Norte, Paraná and Rio de Janeiro (Nascimento *et al.*, 2008). We hope this work may contribute to promoting this kind of initiative for the geosites of the state of Pernambuco.

Acknowledgments

We acknowledge the Serviço Geológico do Brasil – CPRM - for being a partner in the project of interpretative panel production for this geosite.

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