

GEOTRAILS NEAR THE PORTAL CHAPADA DAS MESAS REGION, CHAPADA DAS MESAS NATIONAL PARK, MARANHÃO STATE, BRAZIL

Geotrilhas nas Proximidades do Portal do Parque Nacional Chapada das Mesas, Parque Nacional Chapada das Mesas, Estado do Maranhão, Brasil

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RESUMO

O Parque Nacional da Chapada das Mesas é uma área do sul do Maranhão, Brasil, onde estratégias de geoconservação têm sido estudadas. A análise de uma área nas proximidades do Portal da Chapada das Mesas, no município de Carolina, demonstra a relevância do Patrimônio Geológico dessa área, que proporcionou as primeiras abordagens sobre a proteção e o manejo do bioma Cerrado. A ideia geral das geotrilhas é levar os visitantes a interagir com o ecossistema, orientando-os a refletir sobre a importância da conservação ambiental. Estas trilhas podem ser utilizadas como meio de conservação da natureza e transmitir a importância do conhecimento da Geodiversidade, Geoturismo e Geoeducação, pois permitem aos visitantes interagir com o meio ambiente e mostrar a necessidade de sua conservação. O Geoturismo também pode reunir definições, aplicá-las de forma prática e visual e construir conhecimento através de informações geológicas. Os trabalhos de campo realizados entre 2021 e 2022 permitiram inventariar e propor ideias educativas para a utilização de geotrilhas através da observação das características dos turistas que as procuravam. A pesquisa teve como objetivo mostrar que as geotrilhas representam uma ferramenta útil para atrair o público em geral para áreas de interesse turístico e educacional, orientando o acesso a áreas do meio ambiente e facilitando a vigilância em grandes áreas. A educação ambiental é uma forma de desenvolver a consciência das pessoas para que possam compreender os processos naturais e socioeconômicos que afetam o meio ambiente e assumir posições de responsabilidade para solucionar esses problemas.

Palavras chave: Geotrilhas, Geodiversidade, Geoturismo.

ABSTRACT

The National Chapada das Mesas Park are areas of Southern Maranhão State of Brazil where geoconservation strategies have been studied. The analysis near the Portal Chapada das Mesas area in Carolina municipality. The relevance of the geological heritage of this area provided the earliest approaches on the protection and management for the Cerrado Bioma. The general idea of geotrails is to lead visitors to interact with the ecosystem, guiding them to reflect on the importance of environmental conservation. These trails can be used as a

means of nature conservation and to impart the importance of knowledge of geodiversity, geotourism and geoeducation as they allow visitors to interact with the environment and show the necessity of its conservation. Geotourism can also gather definitions, apply them in a practical and visual manner and construct knowledge through geological information. Fieldwork carried out between 2021 and 2022 allowed for an inventory and proposal of educational ideas for the use of geotrails by observing the characteristics of tourists who sought them. The research aimed to show that geotrails represent a useful tool for attracting the general public to areas of tourist and educational interest, guiding access to areas of the environment and facilitating surveillance in large areas. Environmental education is a way to develop people's awareness and understanding of the natural and socio-economic processes that affect the environment so that they can assume positions of responsibility to solve these problems geoconservation issues.

Keywords: Geotrails, Geodiversity, Geotourism.

INTRODUCTION

According to Embrapa (2022), an “Ecological Trail” comprises a path established within the permanent preservation area that can allow a user to interact with a specific ecosystem, that is, an environment capable of stimulating the public to reflect on the importance of environmental conservation. To Rendeiro et al. (2012), the main attractiveness of an ecological trail is the very environment that surrounds it. These unpaved routes are usually located in natural areas, allowing the visitor to envision natural perspectives with all the native biota and physical environment. For these authors, such trails can be explored for recreational and educational purposes, as their landscape attributes are elements conducive to the polysemic interpretation of the natural environment. Thus, geotrails are trails of a geocological nature with touristic diversity and unique value from scientific, pedagogical and cultural points of view.

The functionalities and uses of trails as means of nature conservation, in all its aspects, are necessary functional resources of knowledge for geodiversity, geotourism and geoeducation (Eisenlohr 2013). Concepts regarding the diversity of rocks – geodiversity, geological heritage, geosites, geoconservation, geotourism, and geoparks – are closely related and have evolved in the last decade in Brazil and worldwide. There are six geoparks in Brazil: Geopark Araripe in the state of Ceará; Seridó Geopark in the state of Rio Grande do Norte; and Caminhos do Canion do Sul Geopark, in the states of Santa Catarina and Rio Grande do Sul, Geopark Uberaba in the state of Minas Gerais (Silva et al., 2024).

Geoconservation is primarily the process of conserving geological heritage, including its management, protection and promotion through interpretation and education, usually in protected or conserved areas (Brilha, 2005). This includes the recognition of formal or informal geosites that have a single or a variety of geological or geomorphological features and processes worthy of protection because of their scientific value (Sharples, 2002; Brilha, 2005). Such geodiversity sites, or geosites, must be well-defined geographically, with one or

more geodiversity elements having unique value from a scientific, pedagogical, cultural or tourist aspect. This integrates all the elements that constitute geodiversity, including paleontological, mineralogical, geomorphological, petrological, and hydrogeological heritages, among others.

To Ramalho (2004), these localities in nature are testimonies of Earth's history, and occur in an interesting, infrequent, or unique way. They are of scientific and pedagogical interest, offering examples of geological phenomena of tourist interest. Machado and Ruchkys (2015) add to this concept by stating that a geosite is a place that comprises a documental resource of scientific nature and of important content for the knowledge and study of geological evolutionary processes and, thus, a record of the evolution of the planet.

According to Komoo (1997), conservation practices for tourism, for example, are carried out for the conservation of geological heritage or bioconservation, where by ecotourism supports the preservation of biological heritage. According to Stueve et al. (2002), despite some divergence between these concepts, pragmatically geotourism can gather definitions and apply them in a practical way of visual basis and of knowledge construction through geological information from one or more heritages. These inferences probably relate to geology as the source for observing the physical environment and, therefore, ecological niches, and extend to the cultural interface. In this sense, geoeological trails (*sensu* trails containing components of geological heritage) are part of an area of scientific interest, which leads us to a path within environmental protection areas that allows interaction with the ecosystem, in addition to encouraging the general public to consider the importance of environmental conservation.

Reynard and Brilha (2018) consider that recent years have seen increased scientific interest in topics regarding geological heritage with a large set of territorial initiatives emerging worldwide. Brilha (2016) argues that not all geodiversity elements have the same importance for society and science, since the criteria that distinguish them are variable, such as representativeness, integrity, rarity, associated scientific knowledge, scenic beauty, interpretive potential, safety, and accessibility, among others. These criteria give dimension to the previously mentioned geodiversity values.

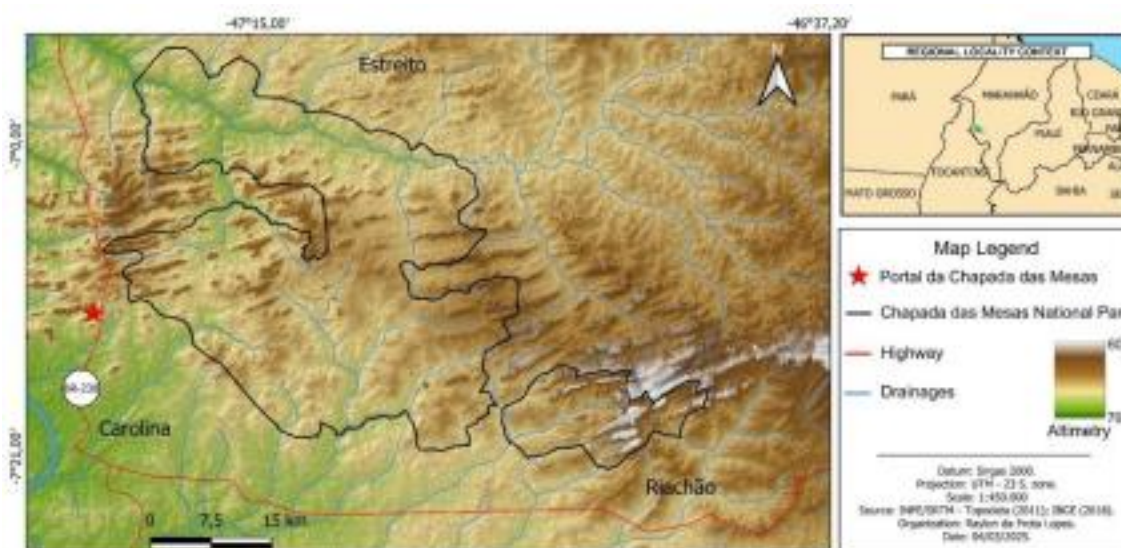
Thus, ecological trails are part of an area of scientific interest, which leads us to a route within environmental protection areas that allows interaction with the ecosystem, in addition to encouraging the public to contemplate the importance of environmental conservation. Some trails of interest to geological heritage in areas of Parque Nacional Chapada das Mesas, located in the municipalities of Carolina and Estreito, Maranhão State, Brazil, have been explored for economic and educational purposes. These natural areas of local interest also present possibilities of acquiring knowledge of geological heritage that, so far, has not been studied. This region has been attracting a great audience from the municipalities of southern Maranhão and Tocantins states, and of other interested national and international publics. Some trails have served as areas for field work by elementary

and high school students, as well as for universities, demonstrating the existing educational potential of the region. The aim of this study is to characterize, for the first time, the geodiversity elements and visitor perceptions of an ecological trail near Portal Chapada das Mesas, located in Parque Nacional Chapada das Mesas, municipality of Carolina, Maranhão State, Brazil.

STUDY AREA

This study focuses on areas in the vicinity of Parque Nacional Chapada das Mesas (PNCM), located in the municipalities of Carolina and Estreito, southern Maranhão State, Brazil. Created as a National Conservation Unit in 2005, PNCM is a protected area of 160,046 hectares in the Cerrado biome. The phytophysiognomy of this unit is characterized by native buriti palm (*Mauritia flexuosa*) forests, hinterland, and plateau landscapes that a set of rock formations, canyons, caves, and waterfalls. These features have been tourist attractions due to their scenic beauty and the adventure activities they support, which have aroused the interest of a large audience in the region.

Figure 01 - Location of Parque Nacional Chapada das Mesas in the municipalities of Carolina and Estreito in Maranhão State, Brazil.



Prepared by: Raylon Lopes (2025).

GEOLOGICAL SETTING

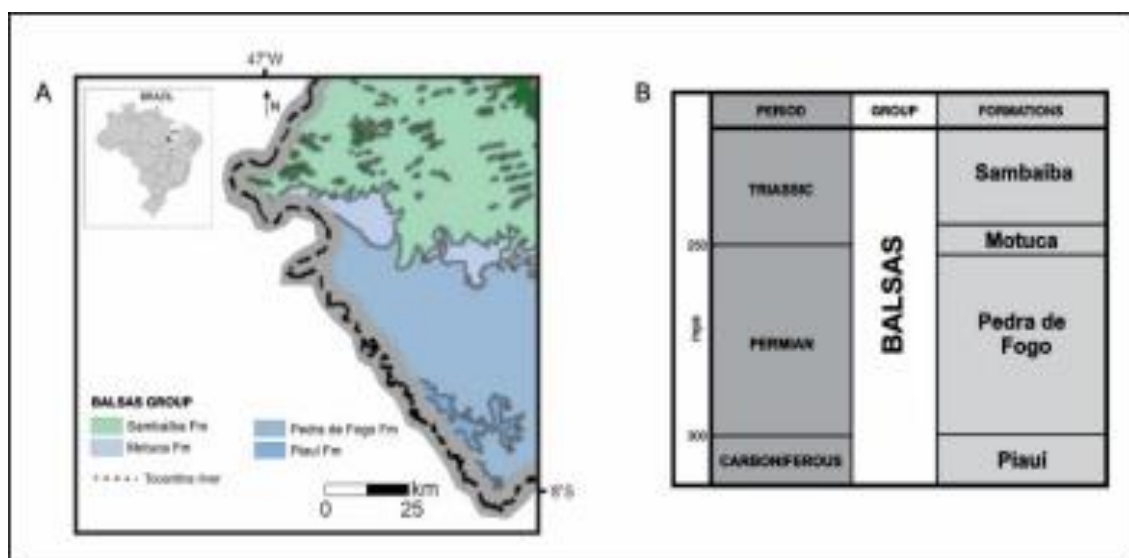
According to Hasui et al. (1984), the Parnaíba Basin is part of the Parnaíba Structural Province and is located in the western part of the Northeast Region of Brazil with records of rocks occurring in large areas in the states of Maranhão and Piauí, and small strips of eastern Pará, western Ceará and northern Tocantins states. Sediment thickness of the basin is approximately 3,500 m at the depocenter and averages, based on geological sections, close to 2,000 m (Arce et al., 2006). Daly et al. (2018) reported that strata of the Parnaíba Basin are correlated

with the Congo Basin, Taoudenni and Mporokoso basins in Africa.

The Parnaíba Basin is composed of sedimentary rocks, deposited from the Ordovician to the Paleogene, and intrusive and extrusive rocks, related to magmatic events from Juro-Triassic to Early Cretaceous ages (*sensu* Vaz et al., 2007). Vaz et al. (2007) subdivides the basin into Serra Grande, Canindé and Balsas groups.

Góes and Feijó (1994) defined the Balsas Group (Figure 02) as the third major sedimentary cycle of the Parnaíba Basin. The Piauí, Pedra de Fogo, Motuca and Sambaíba formations, dated as Carboniferous to Triassic, constitute this group (Vaz et al., 2007). Góes et al. (1990) and Góes & Feijó (1994) proposed this geological unit to gather the clastic-evaporite complex, which is superimposed in discordance with the Canindé Group. Plummer et al. (1948) first defined the Sambaíba Formation to characterize the sandstones that constitute the plateaus observed in the vicinity of the homonymous town. The sedimentary succession consists essentially of a repetition of fine to medium sandstones and pink to reddish quartz with dull, subangular to subround grains. They are friable with levels of kaolinitic clay matrix occurring locally with siliceous cement, giving the rock a highly compact character (Abrantes-Júnior, 2013). The large cross-bedding sandstones, containing several features typical of aeolian sediments, characterize a desert system with fluvial contribution (Vaz et al. 2007). Upper contact occurs with the Lower Jurassic flows of the Mosquito Formation (Góes and Feijó, 1994). The Portal Chapa das Mesas geodiversity site is located on an outcrop of the Sambaíba Formation. This geological unit outcrops irregularly in the study area where rocks of the Motuca Formation are found.

Figure 02 - A, simplified geological area and B, geochronological chart of the Balsas Group.



Source: A adapted from Corrêa-Martins (2019), and B from Vaz et al. (2007).

The geomorphology of the study area is characterized by the depressions of the Araguaia and Tocantins rivers, with a predominance of river plains and terraces; residual plateaus of the Araguaia

Tocantins Interfluve, with tabular and convex shapes; and tablelands and plains of the Farinha river, a unit popularly known as Parque Nacional Chapada das Mesas (PNCM), with genetic characteristics linked to dissection and mostly tabular and ruiniform forms (Dantas et al. 2019).

METHODS

The goals of this study were addressed by the methods of bibliographic review, fieldwork, and inventory of geodiversity sites, following Borba et al. (2013) and Brilha (2016) adapted to the studied area and considering places that have exceptional characteristics for the inventory process.

The trails of interest (ecological trails with constant visitation) are representative of the region's «environmental and educational impact» condition, which is justified by the intensity of visits by the public from schools and in general. The criteria used for their selection include educational value, scientific value, representativeness, accessibility, relationship with cultural aspects and educational and/or geotourism potential. These criteria are commonly adapted from Lima and Sá (2017) to identify sites of geological and geomorphological interest (Reynard, 2007; Rocha et al., 2014).

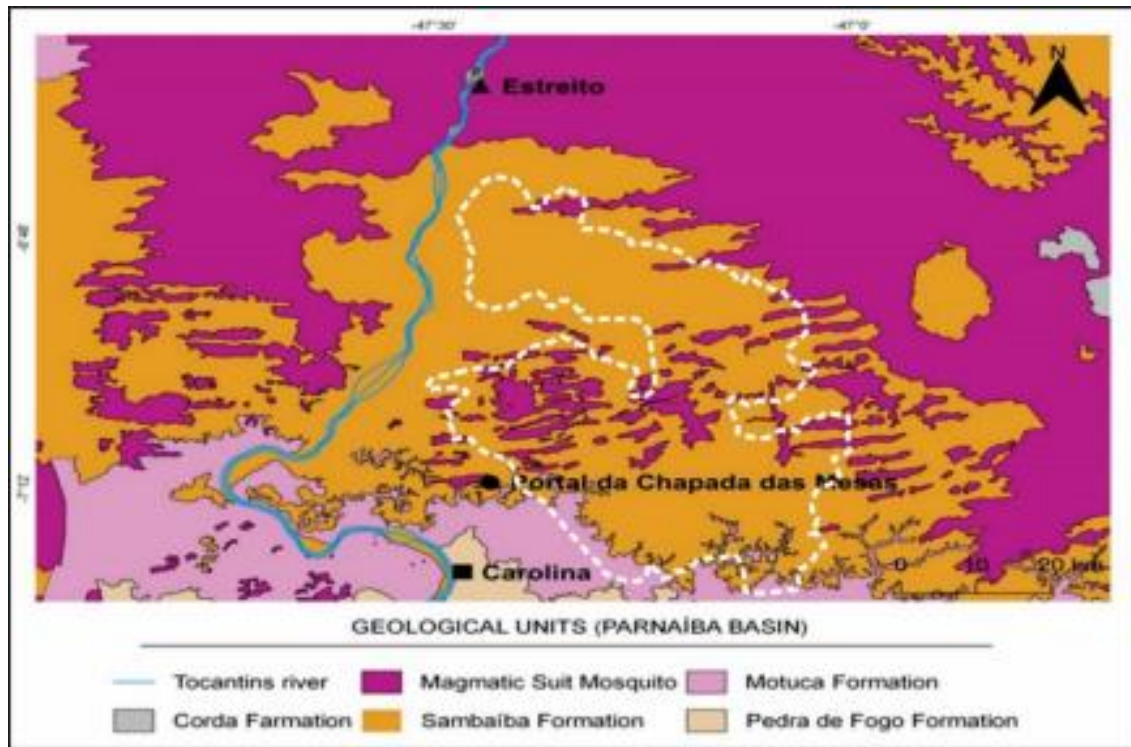
A total of five field campaigns were carried out to identify the local geography and the cultural aspects of the visiting tourists, and to produce conservation awareness by emphasizing the importance of visiting the area. Campaigns were carried out in the study area from April to October 2021 to 2022. Species of the local fauna and flora most seen by guides and visitors were analyzed, and a listing of taxa reported for the region was compiled. An adaptation of the methods of Brilha (2016) was used to inventory the geodiversity sites. This consisted of a review of the literature on the geology and geomorphology of the study area, along with fieldwork and consultation with specialists working in the same field. The inventory of sites of educational value relied on previous consultations with workers in the tourist sector. The following criteria were also used to better understand perceptions of tourism and educational purposes: accessibility, use, restrictions, safety and natural setting. Tourist potential was assessed considering the criteria of interpretation potential, economic level and proximity to leisure areas.

RESULTS

The relief in the study area occurs in sedimentary rocks of the Sambaíba Formation (Balsas Group, Parnaíba Basin). The sedimentary relief is located at an altitude of 700 m. The main watercourses in the study area are the Bebedouro and Raiz streams and the Urupuchete river. This geosite of geological and geomorphological interest is located in the sandstones (Figure 03 and 04). The strata consist of reddish sediments with fine to medium grains and are rich in iron oxide in the sedimentary strata. The area of Portal da Chapada das Mesas corresponds to a series of “ruined witness hills” (*sensu* Melo, 2006), supported by

highly eroded sandstones. This erosion mainly reflects the most advanced stage of weathering in the area of the site, comprising an exceptional landscape marked by "eccentric topographical forms, the so-called ruiniform reliefs." (Melo, 2006).

Figure 03 - Geological map of the Portal Chapada das Mesas geodiversity site, municipality of Carolina, Maranhão State, Brazil, dotted white lines mark the approximate main boundaries of the Park.



Prepared by: Raylon Lopes (2025).

Site weathering, which is a natural process characterized by the abrasion of rocks, is a common differential in the study area. It is seen as a process with physical, chemical and biological characteristics in different sections of a rock. These types of "fragments" are very common in PNCM. Edges of the Portal da Chapada das Mesas geosite are on top of the sandstone walls of the Sambaíba Formation. This structure was formed by the combination of erosive processes and the dissolution and removal of sandstone grains, which removed the most fragile parts and combined with the dissolution and removal of weaker sandstone grains, expose more resistant rock layers, leading to unique and often intricate shapes.

The arched geoform resembles the shape of Tocantins State, which is located in the North Region of Brazil (Portal da Chapada das Mesas is located in the state of Maranhão in the Northeast Region of Brazil) (Figure 05B). The hollowed-out aspect of the shape of the state is what gives the name of Portal da Chapada das Mesas to the geosite. It features a variety of ornaments that reflect the characteristics of the rock and fracturing and erosion processes. According to Góes and Feijó (1994), the runiform relief of the Portal da Chapada das Mesas geosite occurs in a sedimentary area with the presence of erosive processes. It is

approximately 12 meters high and is composed of reddish sandstones with siliciclastic and ferruginous cement, rocks that constitute the scarps of the regional relief.

Figure 04 - The Portal da Chapada das Mesas geodiversity site exposed in sandstones of the Sambaíba Formation, municipality of Carolina: A, general view; B, geoform shaped like the state of Tocantins

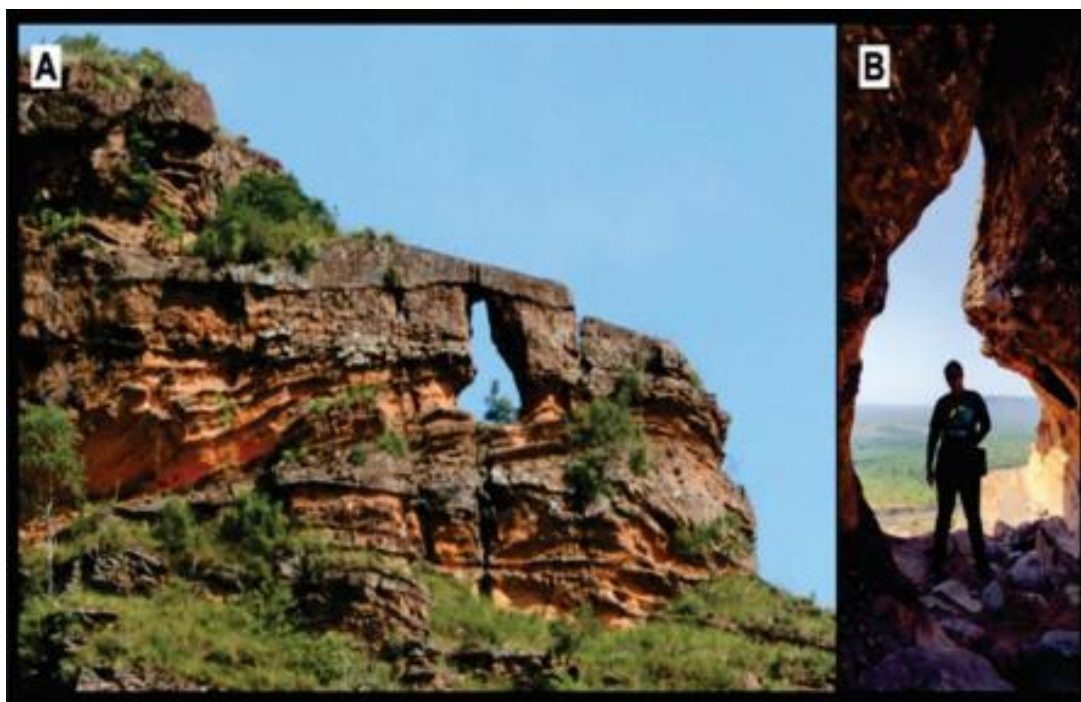


Photo by: Juliana Marinho (October, 2021).

Figure 05 - Geodiversity found on the way to the Portal da Chapada das Mesas geosite (A), Geosubtrack 1; (B) Geosubtrack 2.

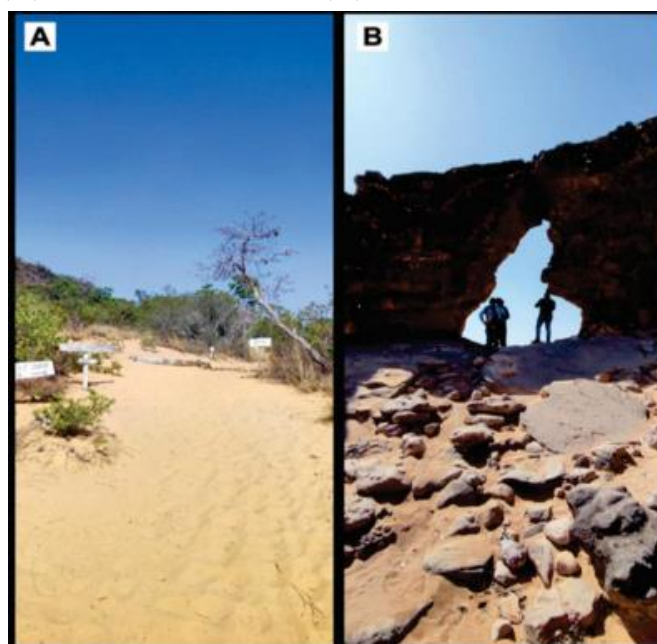


Photo by: Juliana Marinho (October, 2021).

The geotrail of the Portal da Chapada das Mesas geosite is 620 m long with a 520 m portion covered by fine sand that connects with the rocky sandstone part of the Sambaíba Formation. The beginning of the geotrail possesses crusts of laterite concretions (regionally known as caiman head). The vegetation to the sides of the sandstone path is Cerrado *sensu lato* (savanna) with cajuí (*Anacardium humile*), mangaba (*Hancornia speciosa*), oiticica (*Licania rigida*), and maria-preta (*Diatenopteryx sorbifolia*), as examples. Animal can be observed, including those of the teiu lizard (*Tupinambis* sp.) and mammals such as the rock cave and wild rats (*Kerodon rupestris*).

The part of the geotrack that runs through the rocky portion comprises a winding path in waterproof sandstone that prevents water infiltration. This geotrack is split into two geosubtracks (Geosubtrack 1 and Geosubtrack 2), both in sandstones of the Sambaíba Formation. Geosubtrack 1 is a path of approximately 78 m with and a sandstone substrate, meaning it has a sandstone substrate (Figure 05A). Geosubtrack 2 is approximately 115 m long (Figure 05B).

DISCUSSION

A relevant factor in the process of internalization and mental construction of these geoforms by people is pareidolia. According to Marques and Pereira (2019), this process consists of a causal stimulus, which is more linked to image and sound, being perceived as something distinct with meaning, that is, a perceptual distortion. This phenomenon is effective when used as a strategy for valuing geoforms, as it can generate identity, identification and belonging in the target audience, making interactivity and the process of valuing geodiversity much closer, intimate, and effective. In this sense, visitors to the geosite acquire a certain perception in relation to the geoforms through pareidolia.

Vasconcellos (1998) stated that environmental interpretation is a translation of the language of nature into the common language of visitors (i.e., information), instead of distraction, and education, in addition to entertainment. In this sense, the geotrail of the Portal da Chapada das Mesas geodiversity site can be recognized as another resource for the development of dissemination and the possibility of learning about geodiversity topics. Provocative character is evidenced along the geotrail through stimuli of geological and geomorphological natures that arouse curiosity and reflection from the real experience.

Geotrails have the potential to bring visitors closer to environmental issues, as they lead visitors to reflect, thus facilitating the understanding of countless human relationships with nature. (Vasconcellos, 1998). Such an approximation can only be carried out with the existence of natural attractions, which are present along the geotrail of the Portal da Chapada das Mesas geosite, since these arouse the interest and attraction of visitors, as well as natural aspects from geological and geomorphological points of view.

According to this scenario, the natural physical characteristics of the Portal da Chapada das Mesas geosite are inserted in a context of

rock outcrops of the Sambaíba Formation. Geologically and geomorphologically, these rocks underwent planning processes. The dominant units are the regional planning surfaces associated with tabular reliefs. The vegetation of the study area is exclusively part of the Cerrado biome.

The geodiversity characteristics of Portal da Chapada das Mesas presented here include a geosite with representative locations of geodiversity with geological configurations of the analyzed territory. The list of localities included in this work can (and should) be expanded and improved following the experiences of different research groups, the educational development of the region, and potential geoscientific interest in the area. The present study revealed the most relevant geological elements in terms of geological-educational and tourist values. This analysis recognizes the Portal da Chapada das Mesas geodiversity site as possessing the basic requirements to be considered regional geological heritage.

Costa et al. (2014) emphasized that direct contact with the natural content present on geotrails and personal analysis of natural elements awaken the possibility of learning in the public. In this context, it is possible to perceive that geotrails such as Portal da Chapada das Mesas have great motivational and attractive potential for the public, as they represent a search for contemplation and possibilities to learn about the geodiversity of a particular location.

According to Menghini and Guerra (2008), interpretive geotrails are intended to stimulate a new field of perceptions in participants, with the aim of leading them to observe, question, experience, feel and discover the various senses and meanings related to them. These interpretations can be strongly observed throughout the geotrail studied here, since it has geological and geomorphological attractions and the biota of the Cerrado biome.

Geotrails represent a useful tool for attracting the general public to areas of tourist and educational interest, as they can be used to access areas under environmental control and facilitate surveillance in large areas (Ferreti; Britez, 2006). However, ecologically sensitive sectors should be avoided. In this sense, geotrails must be carefully initiated, including situations involving areas in the process of ecological restoration, so their sustainability can be guaranteed.

Environmental education can develop environmental awareness in people so that they can understand the natural and socioeconomic processes that affect the environment and assume responsible positions (Figure 06). The ecological geotrail is a good teaching tool. As observation progresses, along with the explanations and orientations of guides and monitors, participants access knowledge and establish necessary correlations between human occupation and ecosystem damage. The use of this tool also helps visitors perceive the importance of the conservation and knowledge of the area, so that it is possible to correctly publicize such places.

Figure 06 - High school students participating in a practical class about trails and the importance of their conservation.



Photo by: Juliana Marinho (October, 2021).

Geotrails are an interesting didactic-pedagogical resource that can trigger discussions and reflections that are indispensable to approaching the natural environment – an important strategy to know and take care of the environment in which we live (Gazoto; Tozoni-Reis, 2008). The self-guided geotrail serves as a stimulus for the cognitive development of participants, where they can put themselves during everyday situations. However, the best form of participation was observed during narrative orientation, when participants paid attention to explanations. This result corroborates Vasconcellos (2006), who says that “one of the best ways to guide a group is through narrative.” In this sense, it should be noted that environmental education assumes a transforming role in learning and environmental awareness, in which the co-responsibility of individuals becomes an essential objective to promote a new type of development. It is understood, therefore, that environmental education is a necessary condition to modify a scenario of increasing socio-environmental degradation (Jacobi, 2003). This occurs because the reflection on social practices, in a context marked by abiotic processes (e.g., precipitation, nature of the rock, wind), permanent degradation of the environment and its ecosystems, involves a

necessary articulation with the production of meanings about environmental education.

Thus, unlike several studies that begin methodological investigations in areas where tourism does not necessarily already take place, the present study brings, through geotourism, the opportunity to be an alternative to mass tourism, which can act without awareness and conservation of trails that favor the use and sustainable management of these territories. Furthermore, it demonstrates that the planning of geotourism activities in the Chapada das Mesas National Park and its surroundings offers the opportunity to safeguard the geological and especially geomorphological heritage of the south of the state of Maranhão, which is often unknown to visitors. Faced with the dynamics of tourist development in the region of Portal Chapada das Mesas and the established culture of promoting the destination for ecotourism and adventure tourism, we aimed to know the perception of the place as an area of disciplinary study, to provide schools a resource for practice in the disciplines of biology, geography and others, and for ecological knowledge. This leads to research follow-up with a future lecture entitled “The opportunities of geotourism for the Parque Nacional Chapada das Mesas: A look at geodiversity, geoconservation and natural areas”, in local schools, thus methodologically configuring this stage with actions that can provide a new vision not only for tourism but for the conservation of the geotrails, as represented in.

CONCLUDING REMARKS

In view of the partial results obtained thus far by this research, the geotrail of the Portal da Chapada das Mesas geosite in Parque Nacional Chapada das Mesas can be considered to be of geological and geomorphological interest with possibilities for non-formal institutionalized education. Based on applying the proposed method, the spatial distribution of geodiversity elements of the Portal Chapada das Mesas geotrail can be determined, as shown in Figure 05. Based on the methodological criteria, this geodiversity represents the diversity of abiotic elements characterized mainly by geological and geomorphological features, as well as the presence of typical Cerrado vegetation.

The areas of the geotrail with the highest occurrence of geodiversity elements are at the end, which corresponds to representatives of geological and geomorphological heritage. The first is represented by the structures in Triassic sandstones of the Sambaíba Formation (e.g., shape of the state of Tocantins) and slabs that are the substrate of the rocky part of the geotrail. The second, with a larger area, is dominant and consists of all the sedimentary relief. These areas of greater geodiversity reflect the more concentrated presence of sandy soil types and geological structures, as well as the occurrence of water courses in the vicinity. The areas of influence of Cerrado *Lato sensu* vegetation mainly coincide with the areas bordering the beginning of the geotrail.

We can be pointed also be very significant for the operationalization of tourist and pedagogical practices, particularly

those that are cognitive and with an interdisciplinary basis related to natural environments. This geosite contains favorable environments for stimulating and sensitizing human senses, favoring the development of a range of interpretive practices and approaches. In this sense, this geotrail is an environment for the practice and contact with elements of geology.

The Portal Chapada das Mesas geotrail has several geological characteristics. It is not surprising that the main resources of this area of interest in geodiversity are its geomorphology, which is remarkable for its relief. These resources are now known as potential educational and geotourism attractions that are seen in their natural attributes and scenic landscapes. Admittedly, scientific and aesthetic values are the most influential components of natural attraction, implying the use of panels, viewpoints, and stops along the geotrail. Considering the discussion about each element, in a coherent way, the elements of the locality, that is, panels, viewpoints, stops and route, are adequate to propose the geotrail concept as of regional importance. However, to reinforce the educational and geotouristic potential of Portal Chapada das Mesas, cultural and social elements of the community need to be valued so that visitors can enjoy both nature and people. Other existing geosites of interest in the region open possibilities for new studies and potential explorations for the development of geoeducation and geotourism in this protected area of the Cerrado in the south of the state of Maranhão.

Visits to Portal Chapada das Mesas revealed some applications of panels and information about the place, with information on distance and few on environmental awareness, such as geoconservation methodologies. However, more information is still needed even through the characteristics of geoforms, which would be of paramount importance to the tourist, in addition to geoconservation. The entire site has characteristics of exceptional value, including elements of significant scientific value. For territories where tourism is already a practice of constant development, geoconservation strategies play an important role in ordering visitation and safeguarding elements hitherto susceptible to intense anthropic action. Even so, it becomes a challenge to reclassify such spaces, giving relevance to elements that were once neglected by the visitation experience.

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