



## **Geological heritage and geodiversity: the case of the archipelago of Fernando de Noronha, Brazil**

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The archipelago of Fernando de Noronha, Brazil, consists of a set of volcanic islands with chemical characteristics that place them within the group of the most alkaline and unsaturated oceanic islands in the world. These islands have their history linked to the formation of the South Atlantic Ocean and are distant 345 km from the coast of northeastern Brazil. They represent what is left of the emersed parts of a large extinct volcano. With a base diameter estimated at 60 km, this underwater mountain rests on the ocean floor and has its emersed parts located 4000 meters above that floor. Based only on the studied rocks, Noronha was formed over a period of approximately 10.8 million years and there are about 1.5 million years ago ceased to all magmatic events. After that date, the volcano went to the group of so called extinct volcanoes. Seen from another angle and time scale, these islands correspond to the first areas occupied in Brazil and because of that there are historical buildings from the 16th to the 18th centuries. These buildings were constructed using local stone material and are part of the cultural heritage of Brazil. Found more than 500 years, these islands were discovered for tourism activities only in the late 1990s and has since been identified as one of the most beautiful and interesting natural refuges of Brazil. Other oceanic islands in Brazil are smaller, farther from the coast, closed to tourists and only receive researchers. Although there are points in the archipelago of Fernando de Noronha of geological interest sufficient for its recognition as geopark, tourism activities does not include information or visits to these points and there is no defined policy for its geoconservation. Although the geological mapping of the islands occurred in the 1950s, its geology, from the most basic aspects to those that explain its geotectonic context, remains unknown to the visiting public, since there are no proposals for geological day trips or educational actions with such information for the non-geologist tourist. In order to contribute to the diffusion of this geological knowledge, including notions of (geo) conservation, field activities were developed with collection and petrographic characterization of all elements of local geodiversity. With these data and considering the context in which the islands were formed, were prepared day trips for geotourism, contemplating visits to the most interesting geosites of the archipelago. On the other hand, the recent history of the archipelago and the presence of these elements of local geodiversity in the built monuments, led to the proposition of other type of geological or cultural tourism involving visits to the fortresses of the archipelago. Besides these trips, complementary educational activities may be useful to explain the role of the local geodiversity elements, either in support of the archipelago as a natural geological heritage, or in the formation of its built cultural heritage.