

The Scotland District of Barbados



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Submitted by:

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Coordinates: Barbados is located at 13°10' north latitude, 59°35' west longitude, about 150 km east of the Windward Islands of the Lesser Antilles. The Scotland district makes up about 20% of the entire island and is located in its east-central part.

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Description

Barbados is about 32 km long and 23 km across at its widest dimension. The island is characterized by several distinctive and in parts unique geological, geographical, biological, as well as cultural features, most of which are located in the Scotland District. The first peculiarity is the location of the entire island of Barbados, which stands in isolation in front of the Windward Islands of the Lesser Antilles. Furthermore, all those islands consist essentially of volcanic rocks, yet Barbados does not have a volcano but instead has a base of sedimentary rocks that are covered by terraces of carbonate rocks. Barbados also has an amazing array of sedimentary rock formations and structural geological features, including mud diapirs, the largest of which is in the subsurface of the Scotland District. The highest elevation of Barbados is Mount Hillaby in the Scotland District, 340 m above sea level. Although small by comparison to some of the volcanoes in the islands of the Lesser Antilles, Mount Hillaby, and with it the Scotland District of Barbados, is the summit of an elongated submarine mountain range that is several hundreds km long, extending from Trinidad to about Puerto Rico. The Scotland District is the only location in the entire Caribbean where this mountain range is above water. Geologically this range is called an "accretionary prism", which is a thick wedge of sediments that forms on the ocean floor at the junction of two tectonic plates that are pushed together, such as the Atlantic and the Caribbean plates. Continuing compression further deforms and pushes the accretionary prism upwards. The island of Barbados is growing in size as a result.

Physiographically, the Scotland District appears as a half bowl containing the hilly highlands of Barbados, with a dense, in parts jungle-like vegetation, quite unlike the rest of the island, which is rather flat, deforested, and commonly used for agriculture. The overall shape of the Scotland District is that of a round bowl cut in half by the Atlantic ocean that borders along the straight east coast, with sand beaches and dunes. The remainder of the Scotland District is bordered by a variably steep cliff face. The lively topography in the interior of the half bowl is the result of the interplay of complex tectonic folding, faulting, and surface erosion, which commonly leads to landslides. These also are the reasons why the Scotland District is relatively sparsely populated and not used for agriculture, except in some very small pockets. The Scotland district contains rocks about 30 to 50 million years old, namely clay stones, sand- and siltstones, volcanic ash layers, chalk, and radiolarite (chert or flint, when hardened), as well as some odd rock formations such as mineral concretions that resemble huge canon balls. Most of these rocks are folded and faulted in a complex way. Oil has formed from some of the rock layers, and the so-called Scotland Sandstone hosts several oil fields at depths of about 1,000 to 2,000 m. Oil even reaches the surface in a few natural oil seeps in the Scotland District. In some locations the oil is oxidized and solidified to tar-like substance called 'manjak'.