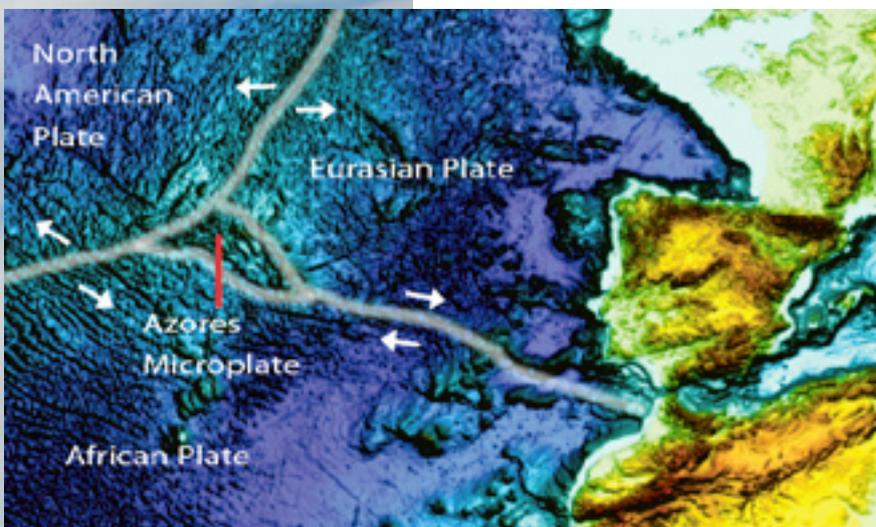


The Mid-Atlantic Evergreen

Island jumping in the Azores is highly recommended. In this way you can experience the geological wonders of these islands, which all owe their existence to the plate tectonics within a triple junction setting.



Volcanoes



The Azores group is located along the Azores spreading system with a triple junction and a volcanic plateau forming along the spreading ridge. The Azores spreading system can be used as a modern analogue to the Norwegian spreading system that was initiated some 55 million years ago.

Berit Løkken and Morten Smelror

In the middle of the Atlantic Ocean, right between Lisbon and New York and about 1,600km from the European continent, the volcanic islands of the Azores archipelago rise some 3,500 m above the ocean floor. The high level of volcanic activity in the area is a result of its location at the boundary between three major tectonic plates. The North American Plate is gradually drifting west, the Eurasian Plate is drifting east and south, and the African Plate is drifting east and north. Between these major plates is the small Azores Microplate, which is drifting westwards. Where the plates pull apart, lava outpourings have created mid-oceanic ridges, and the highest parts of these rise from the sea to create the volcanic islands.

The oldest of the islands, Santa Maria, was formed some 7 million years ago, then sank and later reappeared. As a result it is the only island to have marine fossils preserved in its rocks.

The youngest island is Pico. It was mainly formed some 300,000 years ago. Pico is a typical stratovolcano with slopes as steep as 40 degrees, and yet it is made up of basaltic lava. Most stratovolcanoes are

The pleasures of warm baths are not restricted to the streams, waterfalls and hydrothermal lakes. At some locations along the islands Atlantic "lava shores", warm water flows underneath the sea surface. Near Ponta da Ferrara there used to be a sanatorium where guests could enjoy the healing effects of Aquas Quentes (warm water). Today visitors can go for an ocean swim when the Atlantic is friendly and the waves are not too high. At low tide the sea-temperature will reach 28°C, while at high tide the mean temperature is around 18°C.



This "lavashore" may not be your favourite swimming location, but the water is warm due to the volcanic origin of the islands.

constructed of more silica-rich lavas such as andesite. The steep slopes of Pico probably result from its lava flows having been erupted slowly, so that they did not travel far from their source before cooling and stopping. As the lava flows would tend to pile up around the vent they constructed a

stratovolcano. Today the top of the majestic Pico Alto Volcano, which is the highest mountain on the Azores, reaches 2351 m above the Atlantic Ocean.

In 1811 an even younger island appeared not far off from Sao Miguel. This island was named Sabrina and was claimed by the British, but just a few months later it vanished into the ocean.

The calderas of São Miguel

São Miguel, which is the biggest of the Azores islands has an area of 750 km², is essential dominated by five volcanoes with

What draws most attention to the tourists driving around the islands is the Hortensias (*Hydrangea macrophylla*) which are found almost everywhere. Many of the farm fields are separated by kilometres of *Hortensia* hedges.

calderas that form the highland part of the island. Two of the volcanoes, Pico de Cara and Povoação, are already extinct, while the three others are considered active, but dormant. These three are Água de Pau, Sete Cidades and Furnas. The volcanoes and their calderas are popular tourist targets.

Água de Pau, with its 947 m high Pico Barossa, is located in the "Reserva natural da Lagoa do Fogo". It is named after the beautiful Lake Fogo found inside the caldera. When entering the volcano from the north on the road from Ribeira Grande to Lombadas, you will pass the warm waterfall Caldeira Velha which is frequently illustrated in tourist brochures from the Azores. Stop for a while and enjoy a warm shower under one of the waterfalls in the picturesque jungle environment.

Tip of the day: Climb above the 'classical tourist-stop waterfall' that is found at the end of the well-prepared visitor trail, follow the narrow, steep path higher up in the hillside, and find hidden and even more beautiful waterfalls, free of other tourists.

Exploring volcanic caves

On several islands in the Azores there are places with lava-tube cave formations (<http://www.ewpnet.com/azores/caves.htm>). There are two main ways in which these are formed. The first is a vertical shaft created where lava originally poured out. The other type of cave is the result of a lava flow cooling and solidifying on the outside, while lava inside continues to flow till the tube empties to some degree. The ideal type of lava for this to occur in is the fluid pahoehoe lava, which gives rise to many beautiful formations such as uniform channels, levees, stalactites, stalagmites, lava ropes, perfect tubes and smooth floors for walking.

There are lava-tube caves on all the main islands (in particular Sao Miguel, Terceira, Graciosa and Pico) but the longest and the best developed for visitors is the Gruta das Torres on Pico, in the Cabeco Bravo area, which is over 5 km long

Guided tours are arranged to the caves. The temperature in the caves is 14°C all the year round and they are basically dry and clean, but during prolonged periods of heavy rain there will be drips coming down from the ceiling in a few places. Those who really enjoy water and adventure can visit the island of Graciosa, where it is possible to dive into the submarine lava caves.



Photo: Berit Løkken



By the waterfall Caldeira Velha you can enjoy a warm shower under one of the waterfalls in the middle of the jungle.



Photo: Berit Løkken

The "spring of eternal youth".

The 17 km² large Sete Cidades crater, with its twin crater lakes named the Green and the Blue Lagoons, is also worth a visit. The beautiful lakes and farmland inside the crater, together with surrounding steep, forested, crater walls, are indeed scenic. The most recent eruption was in 1444. Today the nice white village, Sete Ciades, rests peacefully by the Blue Lagoon.

In Furnas you can enjoy a swim in a hydrothermal pond inside the Terra Nostra Park. Here you can also find the 'spring of eternal youth'. A bath in this spring is said to make you 20 years younger. Furnas is the Azores' most famous resort town, and, in addition to fine lodging and thermal baths, the town offers 23 different varieties of mineral waters, famous breads and geyser cooking. So, if the magic of the "youth spring" does not work, you may go to the northern shore of Lake Furnas instead, and enjoy a meal of the local dish Cozido prepared in cans dug into the heated ground. It can also be mentioned that Furnas has the only tea

plantations in Europe, which produce excellent teas, processing the leaves on vintage 19th-century English machinery.

Hikers' digest

With their blue lakes bordered by flowers, dazzling views of the sea from high in the hills, and lush green landscapes of ancient volcanic craters, the islands of the Azores are a paradise for hikers, bikers and nature lovers. Several tourist companies offer guided walks around the largest islands. Well-marked trails and excellent maps also make it easy to choose your own hiking-routes.

The Azores have no dangerous animals like snakes, wolves or tarantulas. Apparently, this is a true paradise. The dogs of the Azores can, however, be quite hostile and scary, trained as they are to attack, and to respond only to the voice of their master. You will find them everywhere in the countryside, protecting the farms. Enjoy your trip – but take care!

The evergreen islands

The Azores are evergreen islands where temperatures are mild and change little from season to season. There is no frost below elevations of 500 m and daytime temperatures average 24°C in late summer and 16° C in winter. The humidity is high, and the rainfall is both regular and well distributed over the year, although with a concentration in September - March. Light cloud cover and short showers are normal, often with clouds hanging over high altitudes, whereas it is sunny along the coast.

Like many other isolated islands, the Azores have many native plant species related to the pre-glacial flora of Europe. The archipelago has a number of endemic species found nowhere else, but since the arrival of the first Portuguese settlers to the Azores, on Santa Maria in 1432, the native flora has suffered severe degradation due to forest clearing, agriculture, and the introduction of exotic species. Areas of laurissilva, laurel and cedar forests, relics of the hygrophite forest that covered the archipelago before it was inhabited, can still be found in many of the islands.