

All human activity, be it economic, scientific or leisure, should be carried out in full respect for the site.

### VISITOR'S CODE

#### Within this area it is not allowed:

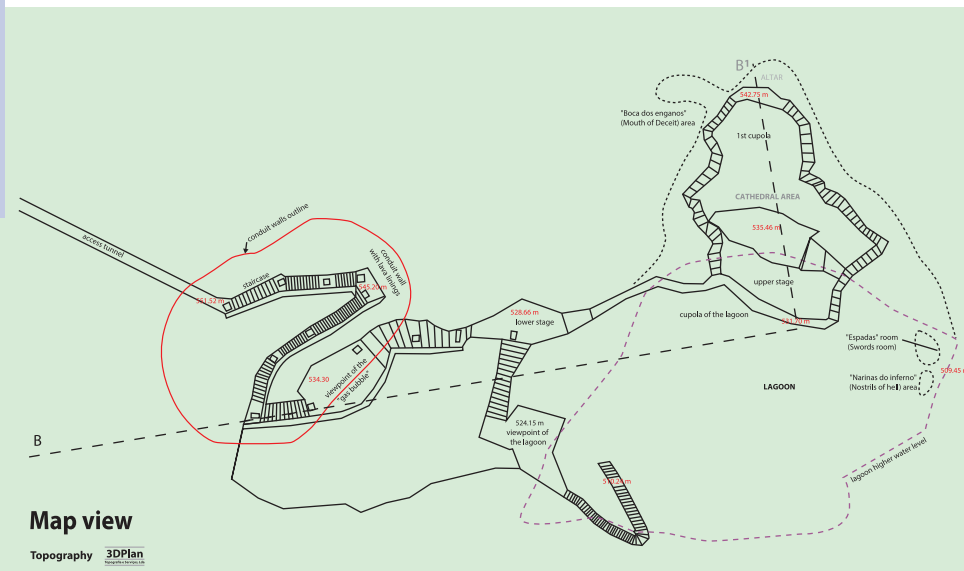
- > To introduce, to catch, to capture, to humble or to hold any animal or plant species
- > The exploitation of geological resources
- > To drop litter
- > To cut trees and to change the vegetation in any way
- > The practise of sport, namely motorsport
- > Any activity that could disturb the ecological equilibrium of this protected area
- > To smoke inside the pit

### HELP PRESERVE A HERITAGE WHICH IS ALSO YOURS

For more information contact:

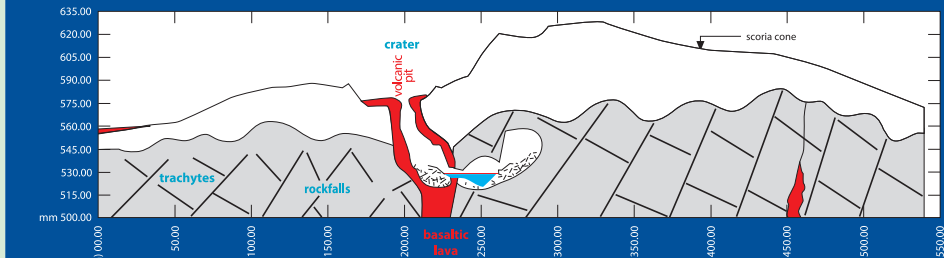
Terceira Natural Park - 00 351 295 212 992

Montanheiros Association (NGO) - 00 351 295 212 992



Map view

Topography 3DPlan



1:5000 Geological cross section B-B'



Aerial photo



Edition

Associação Os Montanheiros  
www.montanheiros.com

Photos: Associação Os Montanheiros



Stalactites





↑ Conduit wall with lava linings

## → ALGAR DO CARVÃO NATURAL MONUMENT

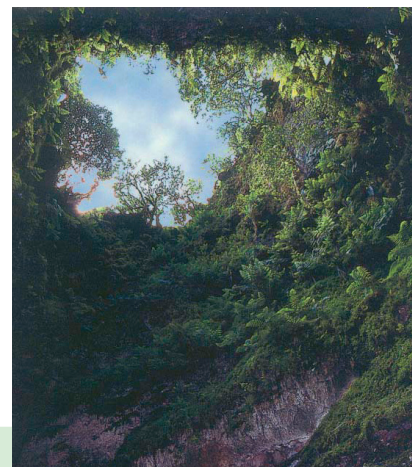
Algar do Carvão is located in the centre of Terceira island, at around 550m above sea level. Previously part of a Natural Geological Reserve, the area of Algar do Carvão (40,5 ha) was reclassified as an Azores “Natural Monument”, by the Regional Decree nr. 9/2004/A, of March 23<sup>rd</sup>, due to its unique volcanic features and its environmental importance.

The volcanic cone in which this impressive pit developed, is part of the area known as the “Basaltic Fissural Zone”, located between the large volcanic edifices of Santa Bárbara to the West, Pico Alto to the North and Guilherme Moniz to the South. Algar do Carvão pit was formed in two distinct phases. One section of the pit is the conduit of a scoria cone, which erupted around 1700 to 2100 years BP, while the oldest and largest section of this volcanic cavity developed into thick trachyte s.s. lava flows or domes (Si ≈ 66%), which are associated with the activity of Pico Alto volcano and are approximately 3200 years old. During the eruption of Algar do Carvão scoria cone, very fluid basaltic lava flows were extruded (Si ≈ 47%), which covered a total area of 16 km<sup>2</sup>, including the all bottom of Guilherme Moniz caldera.

The vent of the volcanic pit is 17 x 27 m in size and it connects with a vertical conduit,

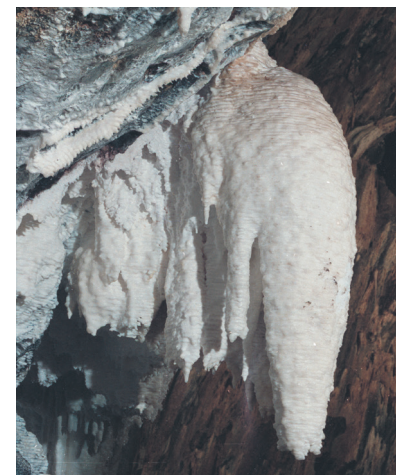
which drops around 45 m. After a scree slope, built-in by a gravity deposit, the conduit drops vertically once again and ends in a lake of crystal clear water, around 80 m deep in relation to the uppermost part of the pit. The lake, which is formed by rainwater, has a maximum depth of about 15 m and dries up almost completely in summer in the years with low precipitation.

↓ Conduit



In some parts of Algar do Carvão pit, the original roof and walls collapsed following a series of rockfalls, whereas in other parts the roof and walls are covered in black, smooth, glassy-type material. These coverings, which resulted from the lava drawback into the conduit, are mainly composed of obsidian, usually as lateral drippings or suspended blades.

The complex geological and biochemical phenomena which occur in the hydrogeological system of Algar do Carvão allowed the formation throughout the years of stalactites and stalagmites of amorphous silica (Si ≈ 77% to 82%), quite probably the most exuberant, rare and beautiful structures present in this volcanic pit and in the volcanic caves of the Azores. These opal stalactites, milky-white coloured with reddish internal veins, cover a large area of the roof and walls of the pit and can reach about 1 m long and 40 to 50 cm in diameter.



↑ Silica stalactite

Algar do Carvão Natural Monument, where we find humid macaronesian forest and peat-mosses type natural vegetation, is part of “Serra de Santa Bárbara e Pico Alto” SCI, listed in the Natura 2000 network. The remarkable flora covering the cone, its crater and a significant part of the volcanic conduit (especially till 22 m below the surface)

includes 34 different liverwort species, 22 species of moss and 27 vascular plants (12 of which are ferns), including some endemic species of the Azores and of the Macaronesia. Among these species are: **Macaronesian laurel** (*Laurus azorica*), **Azorean green heather** (*Erica azorica*), **Azorean bittercress** (*Cardamine caldeirarum*), **Azorean holly** (*Ilex perado azorica*), *Lysimachia azorica*, *Selaginella kraussiana* and the **fern** *Trichomanes speciosum*, which is quite common inside the pit.

In the deeper parts and farther away from the vent, there are various species of green algae, diatoms and mould. The volcanic pit also houses important troglitic fauna, which is adapted to underground life, namely the **beetle** *Trechus terceiranus*, which is endemic in Terceira Island, the **centipede** *Lithobius obscurus azorae* and two spider



↑ Fern (*Trichomanes speciosum*)

species, which are also endemic (*Porrhomma n. sp.* and *Lepthyphantes n. sp.*). In this volcanic pit we also find many kinds of insects which even not being troglitic species yet prefer this type of habitat, for example the **beetle** *Catops coracinus* (only known on Terceira Island) and the **millepede** (*Blaniulus guttulatus*). Algar do Carvão also



↑ Beetle (*Trechus terceiranus*)

contains diverse fauna of spiders, including the Azorean endemic species *Rugathodes acorensis* and the *Meta meriana*. One can also see in this classified area many typical bird species of the Azores, such as the **sparrow** (*Passer domesticus*), the **blackbird** (*Turdus merula azorensis*) and the **Azores chaffinch** (*Fringilla coelebs*).