

Environmental Problems on Caves and Karstlands Enclosed in Portuguese Natural Areas

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Portugal has about thirty protected areas of different size and legal statute. On the other hand there are ten limestone massifs of low (tens of meters) to median (six hundred meters) altitude, most of them on Jurassic limestone, but also Cambrian marbles. Caves are not very extensive: shafts are less than 150 meters and only two caves reach ten kilometers in length.

Only two limestone massifs are on its most part included in protected areas. However, environmental problems are far from being solved although these natural areas have been established for more than twenty years. These threats are of several types: limestone quarries; highways construction increasing of urban areas, lack of sewerage systems in urban areas as well as in farming and cattle raising or other industries. This practice causes cave destruction, karst landscape decay and karst aquifers contamination.

Traditional and wild mass tourism affect about ten caves which have not been previously studied for carrying capacity and, in some cases, have no guides or they are not enough qualified.