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HOTSPOTS OF BIODIVERSITY, RARITY AND ENDEMISM: SETTING PRIORITIES FOR THE CONSERVATION OF CAVES AND KARSTIC AREAS

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The reasons for wanting to conserve caves and cave-dwelling organisms are many and varied. Some of these reasons are related to the environmental or archaeological value of the caves and to the scientific interest of troglobionts and stygobionts, considering that endemic and rare species comprise a major portion of the subterranean assemblages (intrinsic value of caves). Moreover, there are economic reasons for cave conservation, e.g. groundwater protection and use, recreation, tourism and value as a genetic reservoir (exploitable value). The urgent need to select priority areas for conservation of caves and karstic landscapes demands efficient, quantitative area-selection methods to assess the conservation value. Following a modern terminology, caves and karstic massifs may be considered as "hotspots" of rarity, endemism and biodiversity; recent literature demonstrated that the popular method of using hotspots of species richness alone is not efficient, and that selecting hotspots of narrow endemism perform significantly better. The use of statistical techniques and GIS for mapping biodiversity, as well as the selection of biodiversity indicators, allows the objective identification of such hotspots, as well as the assessment of the conservation value of karstic areas. Unfortunately, cave animals are not taken in account in most of existing protectionist laws (see for example the Habitat Directive of the European Community), and most of the "red lists" are in urgent need of revision. Nevertheless, there is a third, deep-rooted reason for wanting to conserve caves, perhaps to do with human culture (aesthetic-ethical value of caves). We feel we can appreciate them visually as well as enjoy looking at their fauna; and there is no need to implement a statistical technique to assess this kind of value.