



INVENTORY OF SINKHOLES IN APULIA, SOUTHERN ITALY

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Sinkhole development occurs in many areas of the world where soluble rocks crop out. The formation of sinkholes may be either natural or caused by man's activities. In both cases, heavy consequences have to be registered on the anthropogenic environment and related infrastructures. The Apulia region of southern Italy is characterized for most of its extension by carbonate rocks, which makes it one of the most remarkable example of karst in the Mediterranean basin. This study, within the framework of a research project devoted to recognition of sinkholes in the apulian karst, intends to provide the first data on the inventory of sinkholes in the region.

The inventory is aimed at collecting information on the extent of this type of karst features. Besides the importance of acquiring new knowledge on karst morphologies in Apulia, this information is necessary to planners and decision makers for performing the most appropriate and suitable programs of land use and development.

Sinkholes are generally the surface expression of the presence of caves and other groundwater flow conduits in carbonate rocks, which are solutionally enlarged secondary permeability features. Sinkholes may be produced by a number of mechanisms, including, but not limited to: karst subsidence; collapse of the roof of hypogean cavities; enlargement of underground cavities through detachment of rocks from the walls and the vault; settlement of infilling materials of cavities; solution of soluble rocks by karst processes; piping in loose materials covering karstified rocks; mining and underground quarrying activities. At the ground surface, the resulting features range from opening of hypogean cavities (which entrance is indicated in Apulia with different terms, depending upon the location in the region: grave, aviso, pulo), development of dolines, presence of cracks and fissures at the ground, damage to roads and other man-made infrastructures.