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**ABSTRACTS**

# BIOGEOGRAPHY AND DISTRIBUTIONAL ECOLOGY OF GROUNDWATER FAUNA IN NORTHEASTERN ITALY: AN UPDATE

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More than 200 caves and springs were sampled intensively by the author during the last 12 years to study the origin, ecology and distribution of stygofauna in northeastern Italy. A preliminary synthesis of the results of this study are presented herein to give an account of fauna composition, distributional patterns of species as well as biogeography of northeastern Italy groundwaters, with particular emphasis on crustaceans.

The groundwater faunas of the different hydrological zones (vadose and phreatic zones in limestones, marlous-arenaceous rocks, alluvials) share only few ubiquitous species, while most of stygobionts are confined to a single zone showing a high degree of specialization. Moreover different hydrological basins are inhabited by vicariant endemic species. Habitat structure and areal fragmentation are probably the most important variables which explain the ecological diversity in this area, even if niche diversification may be important at a local scale. Groundwater biodiversity at a regional scale is high; more than 200 taxa have so far been identified, and several others are waiting for description; most of them are stygobiont. Data lists are presented herein and compared with those available from other regions: the stygofauna of northern Italy seems to be one of the richest in the world.

The origin and biogeography of some groups of groundwater crustaceans (copepods, isopods and amphipods) is discussed in detail, and using multivariate statistical techniques the "Alpine province" (*sensu* Pesce, 1985) which was supposed to include most of northern Italy territory is divided into several distinct stygofaunal provinces, showing the complexity of the biogeographic patterns of groundwater assemblages in the study area.