Red List of Azorean endemic cave adapted arthropods: an ecological and conservation overview

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Abstract

The Azorean endemic arthropod fauna includes seventeen species and subspecies adapted to the subterranean environment. Most of these species are known from single lava-tubes or volcanic pits (seven out of the 17 species) and only a few are widespread (namely Trechus terceiranus and Trechus picoensis). Moreover, many of the caves are under severe impact of the main economic activity on Azores, dairy–cattle production. Consequently, it is urgent to assess the conservation status of the Azorean endemic cave arthropod fauna. The aims of this contribution are twofold:

1. present the results of the first IUCN red-list assessment of the conservation status of Azorean endemic cave adapted arthropods (e.g. Borges et al. 2016, Borges and Amorim 2017a, Borges and Amorim 2017b, Borges and Amorim 2017c, Boieiro et al. 2018, Borges and Amorim 2018a, Borges and Amorim 2018b, Borges and Amorim 2018c, Borges and Amorim 2018d, Borges and Amorim 2018e, Rego et al. 2018) and

2. present an overview of the major threats involving the conservation of those species. The assessments of extinction risk were based on the IUCN Red List
categories and criteria and the most updated guidelines. Overall, 15 out of the 16 assessed species are threatened (CR+ EN + VU). The most diverse group, the ground-beetles (Coleoptera, Carabidae) include half of the assessed species and have five species considered as Critically Endangered (CR) (*Thalassophilus azoricus*, *Trechus jorgensis*, *Trechus montanheirorum*, *Trechus oromii*, *Trechus pereirai*).

Most of the species have small extent of occurrence (EOO less than 12 km²) and reduced area of occupancy (AOO less than 12 km²). The main current threat to the species is the impact of agriculture activities. We suggest as future measures of conservation the regular monitoring of the species (every ten years) and fencing the entrances of the caves where human intrusion and disturbance has been occurring. The Azorean Government will publish legislation for the protection of the most important Azorean caves in 2018.

**Keywords**

Azores, cave species, islands, IUCN, Arthropoda, Portugal, species conservation profiles, rarity

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Paulo A. V. Borges conceived the ideas. All the remaining authors participated in species evaluations.

References