



Conference Abstract

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

Paulo Alexandre Vieira Borges[‡], Lucas A Lamelas-Lopez[‡], Rui Nunes[‡], Isabel R. Amorim[‡], Mário Boieiro[‡], Carla Rego[‡]

[‡] CE3C – Centre for Ecology, Evolution and Environmental Changes / Azorean Biodiversity Group and Universidade dos Açores, Angra do Heroísmo, Azores, Portugal

Corresponding author: Paulo Alexandre Vieira Borges (pborges@uac.pt)

Received: 23 Aug 2018 | Published: 30 Aug 2018

Citation: Borges P, Lamelas-Lopez L, Nunes R, Amorim I, Boieiro M, Rego C (2018) Red List of Azorean endemic cave adapted arthropods: an ecological and conservation overview. ARPHA Conference Abstracts 1: e29283. <https://doi.org/10.3897/aca.1.e29283>

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

Presenting author

Paulo A. V. Borges

Presented at

24th International Conference on Subterranean Biology (20 – 24 August 2018). University of Aveiro, Portugal; Organized under the Auspices of the International Society for Subterranean Biology

Acknowledgements

Many thanks to the project "Toyota Global Species Programme" that is supporting the IUCN SSC Mid-Atlantic Islands Specialist Group in performing the species conservation Species conservation profile of Azorean endemic arthropods.

For the development of this paper the work of IRA, LLL, RN, MB and CR was partly supported, respectively, by grants FCT-SFRH/BPD/102804/2014, FCT-SFRH/BD/115022/2016, FRCT-M3.1.2/F/035/2011, FCT-SFRH/BPD/86215/2012 and FCT-SFRH/BPD/91357/201.

Funding program

Participation on this Congress was Funded by FCT within the project UID/BIA/00329/2013

Hosting institution

University of Azores

Author contributions

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

References

- Boieiro M, Borges P, Rego C (2018) *Cixius cavazoricus*. IUCN Red List of Threatened Species <https://doi.org/10.2305/iucn.uk.2018-1.rlts.t97218908a99166794.en>
- Borges P, Crespo L, Cardoso P (2016) Species conservation profile of the cave spider *Turinyphia cavernicola* (Araneae, Linyphiidae) from Terceira Island, Azores, Portugal. *Biodiversity Data Journal* 4: e10274. <https://doi.org/10.3897/bdj.4.e10274>
- Borges P, Amorim IR (2017a) *Trechus oromii*. IUCN Red List of Threatened Species <https://doi.org/10.2305/iucn.uk.2017-3.rlts.t97122456a99166579.en>
- Borges P, Amorim IR (2017b) *Trechus jorgensis*. IUCN Red List of Threatened Species <https://doi.org/10.2305/iucn.uk.2017-3.rlts.t97120924a99166569.en>
- Borges P, Amorim IR (2017c) *Thalassophilus azoricus*. IUCN Red List of Threatened Species <https://doi.org/10.2305/iucn.uk.2017-3.rlts.t97118594a99166559.en>
- Borges P, Amorim IR (2018a) *Trechus pereirai*. IUCN Red List of Threatened Species <https://doi.org/10.2305/iucn.uk.2018-1.rlts.t97122954a99166584.en>
- Borges P, Amorim IR (2018b) *Trechus terceiranus*. IUCN Red List of Threatened Species <https://doi.org/10.2305/iucn.uk.2018-1.rlts.t97125072a99166594.en>
- Borges P, Amorim IR (2018c) *Trechus picoensis*. IUCN Red List of Threatened Species <https://doi.org/10.2305/iucn.uk.2018-1.rlts.t97124342a99166589.en>
- Borges P, Amorim IR (2018d) *Trechus montanheiorum*. IUCN Red List of Threatened Species <https://doi.org/10.2305/iucn.uk.2018-1.rlts.t97122215a99166574.en>
- Borges P, Amorim IR (2018e) *Trechus isabelae*. IUCN Red List of Threatened Species <https://doi.org/10.2305/iucn.uk.2018-1.rlts.t97120426a99166564.en>
- Rego C, Boieiro M, Borges P (2018) *Cixius azopicavus*. IUCN Red List of Threatened Species <https://doi.org/10.2305/iucn.uk.2018-1.rlts.t97217920a99166774.en>