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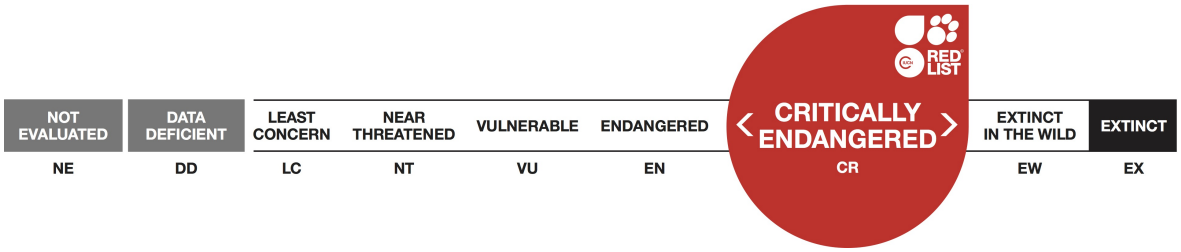
Catops velhocabrali, Azorean small scavenger beetle

Assessment by: Borges, P.A.V. & Lamelas-López, L.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Coleoptera	Leiodidae

Taxon Name: *Catops velhocabrali* Blas & Borges, 1998

Common Name(s):

- English: Azorean small scavenger beetle

Taxonomic Source(s):

De Jong, Y., Verbeek, M., Michelsen, V., Bjørn, P.P., Los, W., Steeman, F., Bailly, N., Basire, C., Chylarecki, P., Stloukal, E., Hagedorn, G., Wetzel, F.T., Glöckler, F., Kroupa, A., Korb, G., Hoffmann, A., Häuser, C., Kohlbecker, A., Müller, A., Güntsch, A., Stoev, P. and Penev, L. 2014. Fauna Europaea – all European animal species on the web. *Biodiversity Data Journal* 2: e4034. DOI: 10.3897/BDJ.2.e4034.

Assessment Information

Red List Category & Criteria: Critically Endangered B1ab(i,ii,iii,iv,v) ver 3.1

Year Published: 2017

Date Assessed: January 15, 2017

Justification:

Catops velhocabrali is an endemic species from Sta. Maria (Azores, Portugal). It has a very small extent of occurrence (EOO = 12 km²) and area of occupancy (AOO = 12 km²). There is a continuing decline in the EOO, AOO, extent and quality of habitat as well as the number of mature individuals as a result of major land-use change in the last 100 years. The species occurs only at one location. Therefore, we suggest as future measures of conservation: (1) regular monitoring of the species; and (2) removal of invasive plants and reforestation with native trees. Based upon the small geographic range of the species with only one location and continuing decline of its habitat area and quality, it is assessed as Critically Endangered.

Geographic Range

Range Description:

Catops velhocabrali is a single island endemic species from Santa. Maria (Azores, Portugal) (Borges *et al.* 2010), known from Natural Reserve of Pico Alto. The extent of occurrence (EOO) is 12 km² and the maximum estimated area of occupancy (AOO) is 12 km².

Country Occurrence:

Native: Portugal (Azores)

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Distribution Map

Catops velhocabrali

Range

Extant (resident)

Compiled by:

Paulo Borges

NE DD LC NT VU EN CR CRITICALLY ENDANGERED EW EX

The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

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Population

The species is very rare and only known from a single subpopulation in Sta. Maria island. A continuing decline in the number of mature individuals is inferred due to human activities (associated with agriculture and cattle pollution), a small subpopulation, small patches and by the expansion of alien plants.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

This species occurs in different habitats: native forests, *Cryptomeria japonica* plantations and MSS - Mesocavernous Shallow Stratum in Sta. Maria island (Blas and Borges 1999). This species has an altitudinal range between 450 and 550 m. It is a decomposer of organic matter (saprophagous) with night activity.

Systems: Terrestrial

Use and Trade

This species is not utilised.

Threats (see Appendix for additional information)

In the past, the species has probably strongly declined due to changes in habitat size and quality (Terzopoulou et al. 2015, Triantis et al. 2010). Currently the most important ongoing threats to this species are *Cryptomeria japonica* wood & pulp plantations management and the spread of invasive plants namely *Pittosporum undulatum* and *Hedychium gardnerianum* since are changing the habitat structure, namely decreasing the cover of bryophytes and ferns in the soil and promoting the spread of other plants. Based on Ferreira et al. 2016 the habitat will further decline as a consequence of climate change (increasing number of droughts and habitat shifting & alteration).

Conservation Actions (see Appendix for additional information)

The species is not protected by regional law. Its habitat is in a regionally protected area (Natural Park of Santa Maria). The Santa Maria Natural Park administration is currently starting control measures of the invasive plants. Further spread of invasive plants needs to be stopped in order to avoid any future declines of the species. Degraded habitats should be restored and a strategy needs to be developed to address the future threat by climate change. It is necessary a monitoring plan for the invertebrate community in the MSS habitat in order to contribute to the conservation of this species. A habitat management plan is needed and anticipated to be developed during the coming years. Further research is needed into its ecology and life history in order to find extant specimens in new sites with MSS habitat and obtain information on population size, distribution and trends. A monitoring every ten years using the BALA protocol will inform about habitat quality (see e.g. Gaspar *et al*. 2011).

Credits

Assessor(s): Borges, P.A.V. & Lamelas-López, L.

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Reviewer(s): Danielczak, A.

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Triantis, K.A., Borges, P.A.V., Ladle, R.J., Hortal, J., Cardoso, P., Gaspar, C., Dinis, F., Mendonça, E., Silveira, L.M.A., Gabriel, R., Melo, C., Santos, A.M.C., Amorim, I.R., Ribeiro, S.P., Serrano, A.R.M., Quartau, J.A. and Whittaker, R.J. 2010. Extinction debt on oceanic islands. *Ecography* 33: 285-294.

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External Resources

For Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.4. Forest - Temperate	Resident	Suitable	Yes
7. Caves and Subterranean Habitats (non-aquatic) -> 7.1. Caves and Subterranean Habitats (non-aquatic) - Caves	Resident	Suitable	Yes
7. Caves and Subterranean Habitats (non-aquatic) -> 7.2. Caves and Subterranean Habitats (non-aquatic) - Other Subterranean Habitats	Resident	Suitable	Yes
14. Artificial/Terrestrial -> 14.3. Artificial/Terrestrial - Plantations	Resident	Marginal	-
0. Root -> 16. Introduced vegetation	Resident	Marginal	-

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
10. Geological events -> 10.1. Volcanoes	Future	Whole (>90%)	Very rapid declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 2. Species Stresses -> 2.1. Species mortality		
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Future	Whole (>90%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
11. Climate change & severe weather -> 11.2. Droughts	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality		
2. Agriculture & aquaculture -> 2.2. Wood & pulp plantations -> 2.2.1. Small-holder plantations	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.2. Named species (Pittosporum undulatum)	Ongoing	Majority (50-90%)	Rapid declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.2. Species disturbance		

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8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.2. Named species (Hedychium gardnerianum)	Ongoing	Majority (50-90%)	Rapid declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.2. Species disturbance		

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions in Place
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over part of range
Occur in at least one PA: Yes
Percentage of population protected by PAs (0-100): 81-90

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions Needed
2. Land/water management -> 2.1. Site/area management
2. Land/water management -> 2.2. Invasive/problematic species control
2. Land/water management -> 2.3. Habitat & natural process restoration
4. Education & awareness -> 4.1. Formal education
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.3. Sub-national level

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
2. Conservation Planning -> 2.2. Area-based Management Plan
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

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Distribution
Estimated area of occupancy (AOO) (km²): 12
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km²): 12
Continuing decline in extent of occurrence (EOO): Yes
Extreme fluctuations in extent of occurrence (EOO): Unknown
Number of Locations: 1
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: Unknown
Lower elevation limit (m): 450
Upper elevation limit (m): 550
Population
Continuing decline of mature individuals: Yes
Population severely fragmented: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 1
Movement patterns: Not a Migrant

The IUCN Red List Partnership

The IUCN Red List of Threatened Species™ is produced and managed by the IUCN Global Species Programme, the IUCN Species Survival Commission (SSC) and The IUCN Red List Partnership.

The IUCN Red List Partners are: Arizona State University; BirdLife International; Botanic Gardens Conservation International; Conservation International; NatureServe; Royal Botanic Gardens, Kew; Sapienza University of Rome; Texas A&M University; and Zoological Society of London.