The IUCN Red List of Threatened Species™
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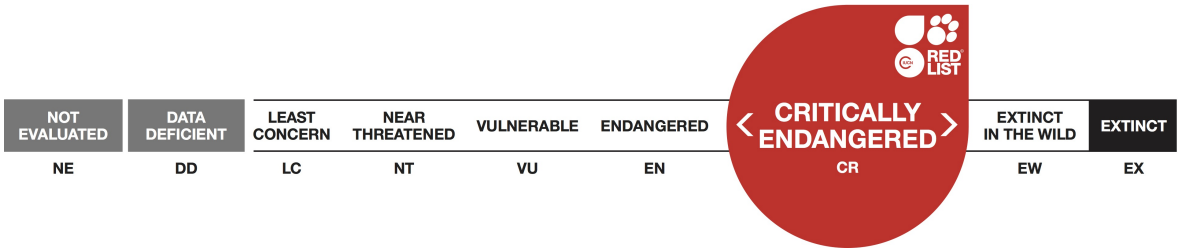
Scope: Global
Language: English

Aleochara freyi, Rove beetle

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



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Coleoptera	Staphylinidae

Taxon Name: *Aleochara freyi* Bernhauer, 1940

Common Name(s):

- English: Rove beetle

Taxonomic Source(s):

2016. The Azorean Biodiversity Portal. Available at: http://azoresbioportal.uac.pt/.

Assessment Information

Red List Category & Criteria: Critically Endangered B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v) ver 3.1

Year Published: 2017

Date Assessed: January 17, 2017

Justification:

Aleochara freyi is an endemic species from Pico (Azores, Portugal) (Borges *et al.* 2010), known from Reserva Natural da Montanha do Pico. It has a very small extent of occurrence (EOO = 8 km²) and area of occupancy (AOO = 8 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:

Aleochara freyi is single island endemic species from Pico (Azores, Portugal) (Borges *et al.* 2010), known from Pico mountain protected area. The extent of occurrence (EOO) is 8 km² and the maximum estimated area of occupancy (AOO) is 8 km².

Country Occurrence:

Native: Portugal (Azores)

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Distribution Map

Aleochara freyi

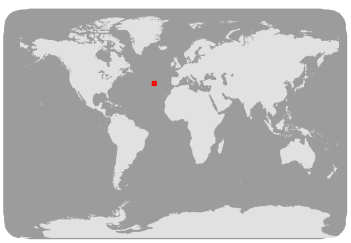
Range

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 only known from a single subpopulation in Pico island. A continuing decline in the number of mature individuals is inferred from historical records. This species can be on the edge of extinction due to major historical changes in its type locality.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

This species occurs in one single native forest patch (dominated by *Juniperus brevifolia* and *Erica azorica*), located at high altitude, in Pico island (Montanha do Pico). It is a nocturnal predator that lives under bark of native trees and in the soil.

Systems: Terrestrial

Use and Trade

The 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, mostly creation of pastures (Triantis et al. 2010). One of the most important ongoing threats to this species is the high elevation dairy cattle and meat cattle semi-natural pastures and the spread of invasive plants namely *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 Pico; Reserva Natural da Montanha do Pico). Degraded habitats should be restored and a strategy needs to be developed to address the future threat by climate change. 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 the high elevation semi-natural pastures of Pico island and obtain information on population size, distribution and trends. It is also necessary a monitoring plan for the invertebrate community in the habitat in order to contribute to perform a species potential recovery plan. 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.

Reviewer(s): Danielczak, A.

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Disclaimer

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
3. Shrubland -> 3.4. Shrubland - Temperate	Resident	Suitable	Yes

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 (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 Research, Monitoring and Planning

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Conservation Actions in Place
Systematic monitoring scheme: Yes
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over entire range
Occur in at least one PA: Yes
Percentage of population protected by PAs (0-100): 91-100

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

Distribution
Estimated area of occupancy (AOO) (km²): 8
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km²): 8

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Distribution
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): 1200
Upper elevation limit (m): 1800
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

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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.