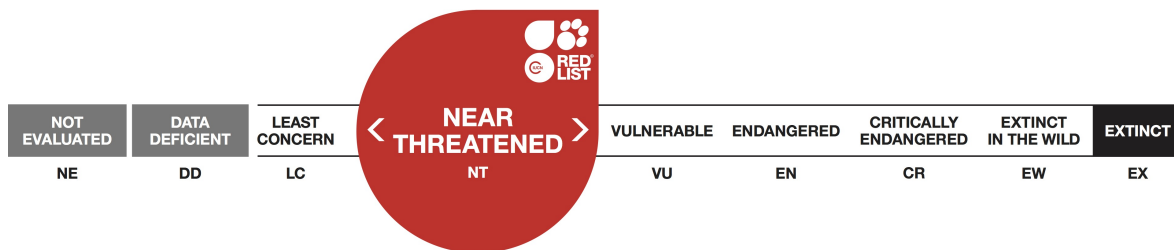


Atheta dryochares, Rove beetle

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



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Citation: Borges, P.A.V., Lamelas-López, L. & Amorim, I.R. 2018. *Atheta dryochares*. The IUCN Red List of Threatened Species 2018: e.T97180394A99166714.

<http://dx.doi.org/10.2305/IUCN.UK.2018-1.RLTS.T97180394A99166714.en>

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Coleoptera	Staphylinidae

Taxon Name: *Atheta dryochares* Israelson, 1985

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: Near Threatened [ver 3.1](#)

Year Published: 2018

Date Assessed: January 19, 2017

Justification:

Atheta dryochares is an endemic species present in Faial, Pico, Graciosa, São Jorge, Terceira, S. Miguel and Sta. Maria islands (Azores, Portugal). It has a relatively large extent of occurrence (EOO = 25,220 km²) but a small area of occupancy (AOO = 104 km²). However, the AOO is overestimated since the real size of native forest fragments is 40 km². The species occurs in medium and high altitude in hyper-humid pristine forests associated with the canopy of endemic trees. Based upon the number of locations that have ongoing threats it is assessed as Near Threatened.

Geographic Range

Range Description:

Atheta dryochares is an endemic species present in Faial, Pico, Graciosa, São Jorge, Terceira, S. Miguel and Sta. Maria islands (Azores, Portugal) (Borges *et al.* 2010; Borges, unpublished data), known in Natural Forest Reserves of Caldeira do Faial (Faial), Caveiro and Mistério da Prainha (Pico), Topo (São Jorge), Biscoito da Ferraria, Pico Galhardo, Caldeira Sta. Bárbara e Mistérios Negros and Terra Brava (Terceira); Pico da Vara, Atalhada and Graminhais (S. Miguel); and Pico Alto (Sta. Maria). The extent of occurrence (EOO) is *ca* 25,000 km² and the maximum estimated area of occupancy (AOO) is 104 km².

Country Occurrence:

Native: Portugal (Azores)

Population

The species is particularly abundant in the canopy of endemic trees, and subpopulations are known in seven islands (Faial, Pico, Graciosa, São Jorge, Terceira, S. Miguel and Sta. Maria). The species presents a stable population. The habitat is protected and we assume no impact for the population.

Current Population Trend: Stable

Habitat and Ecology (see Appendix for additional information)

This species occurs in native forests dominated by *Ilex perado* subsp. *azorica*, *Laurus azorica*, *Erica azorica*, *Juniperus brevifolia* and *Vaccinium cylindraceum*, in the islands of Faial, Pico, São Jorge, Graciosa, Terceira, S. Miguel and Sta Maria (Azores). This species has an altitudinal range between 400 and 1200 m. It is a predator that lives under bark, and is associated with lichens and bryophytes of endemic trees, being active during the night. Based on seasonal data from SLAM traps obtained in several islands between 2012 and 2016, the adults are active all year, being most abundant in spring and summer (Borges *et al.* 2017).

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 (Triantis *et al.* 2010; Terzopoulou *et al.* 2015). 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*, *Clethra arborea* 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 located in regionally protected areas (Natural Parks of Faial, Pico, São Jorge, Terceira, S. Miguel and Sta. Maria). Degraded habitats should be restored and a strategy needs to be developed to address the future threat by climate change. Formal education and awareness is needed to allow future investments in restore habitats invaded by invasive plants. Further research is needed into its ecology and life history in order to find extant specimens in another islands 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 in some islands where invasive plants are changing habitat structure. A monitoring every ten years using the BALA protocol will inform about habitat quality (see Gaspar *et al.* 2011).

Credits

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

Reviewer(s): Danielczak, A.

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Citation

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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

Threats

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

Threat	Timing	Scope	Severity	Impact Score
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
Systematic monitoring scheme: Yes
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over entire range

Conservation Actions in Place
Occur in at least one PA: Yes
Percentage of population protected by PAs (0-100): 81-90
In-Place Education
Subject to recent education and awareness programmes: Yes

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
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 104
Continuing decline in area of occupancy (AOO): No
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km ²): 25000
Continuing decline in extent of occurrence (EOO): No
Extreme fluctuations in extent of occurrence (EOO): Unknown

Distribution
Number of Locations: 13
Continuing decline in number of locations: Yes
Lower elevation limit (m): 400
Upper elevation limit (m): 1200
Population
Continuing decline of mature individuals: No
Population severely fragmented: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: No
Generation Length (years): 1
Movement patterns: Not a Migrant

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