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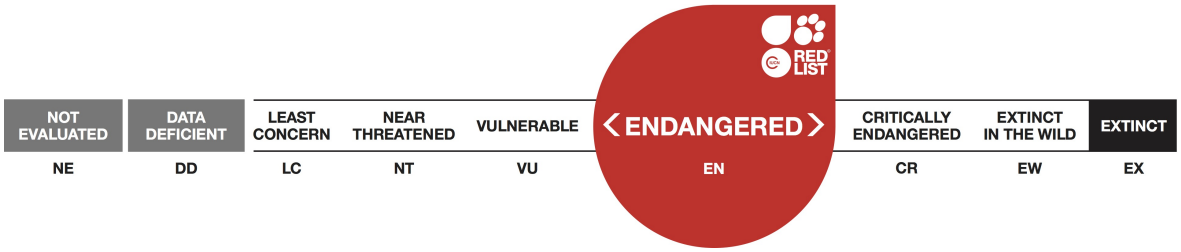
Scope: Global
Language: English

Atlantocis gillerforsi, Minute Tree Beetle

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



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Coleoptera	Ciidae

Taxon Name: *Atlantocis gillerforsi* Israelson, 1985

Common Name(s):

- English: Minute Tree Beetle, Fungus 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: Endangered B2ab(ii,iii,iv,v) ver 3.1

Year Published: 2018

Date Assessed: March 21, 2017

Justification:

Atlantocis gillerforsi is an endemic species occurring in Flores, Terceira, Pico, S. Miguel and Sta. Maria islands (Azores, Portugal). It has a large extent of occurrence (EOO = ca 34,000 km²) and small area of occupancy (AOO = 64 km²). The species is common and only known from at least five subpopulations in 11 locations. Most of the area of occurrence is protected and it is well preserved. In the past, the species has probably strongly declined due to changes in habitat size and quality. Currently invasive plants *Hydrangea macrophylla*, *Pittosporum undulatum* and *Hedychium gardnerianum* are changing some of the areas and decreasing the quality of the habitat. Based on Ferreira et al. (2016) the habitat will further decline as a consequence of climate change (increasing number of droughts). Therefore, we suggest as future measures of conservation: (1) regular monitoring of the species; and (2) control of invasive species namely Hedychium gardnerianum. Based upon the small area of occupancy and continuing decline of its habitat area and quality, it is assessed as Endangered.

Geographic Range

Range Description:

Atlantocis gillerforsi is an endemic species present in Flores, Terceira, Pico, S. Miguel and Sta Maria islands (Azores, Portugal) (Borges *et al.* 2010), known from Natural Forest Reserves of Morro Alto e Pico da Sé (Flores); Pico Galhardo and Terra Brava (Terceira); Atalhada and Pico da Vara (S. Miguel) and Pico Alto (Sta. Maria). The extent of occurrence (EOO) is *ca* 34,000 km² and the maximum estimated area of occupancy (AOO) is 64 km².

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Country Occurrence:

Native: Portugal (Azores)

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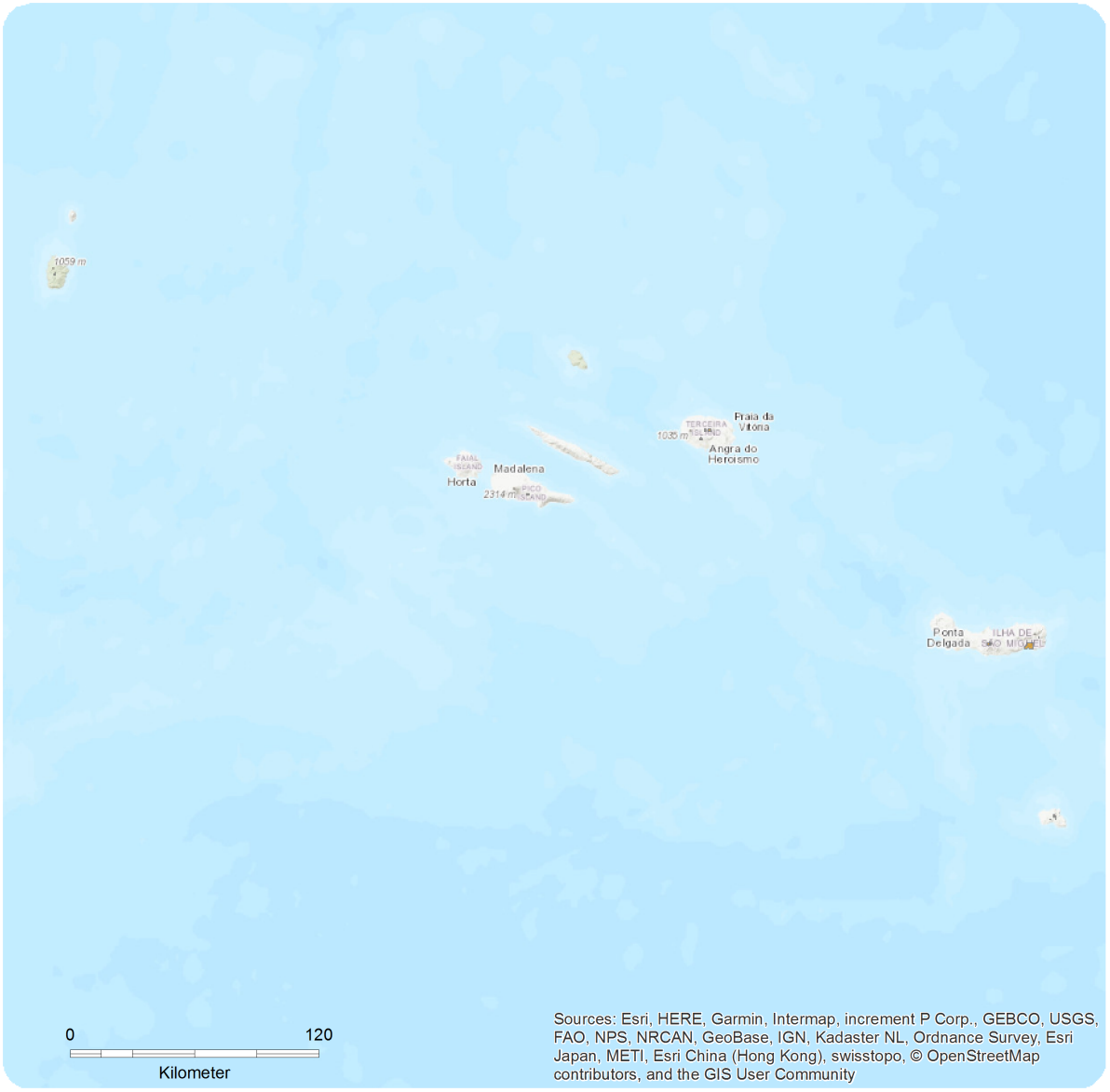
Distribution Map

Atlantocis gillerforsi



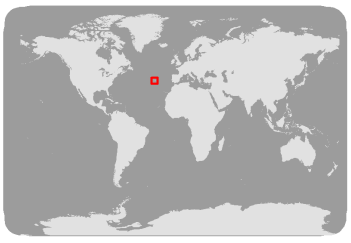
Range

Extant (resident)

Compiled by:

Paulo Borges

NE DD LC NT VU EN ENDANGERED CR 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 abundant. However, part of the area is starting to be impacted by invasive plants (*Hydrangea macrophylla*, *Pittosporum undulatum* and *Hedychium gardnerianum*) that are disrupting the quality of forest ground with potential decline in the number of individuals. This species has been assessed here as being severely fragmented, as it is distributed in isolated patches in five islands. At least 50% of its population can be found in subpopulations/in habitat patches that are 1) smaller than would be required to support a viable population, and 2) separated from other habitat patches by a large distance. In fact, the species occurs in natural forest fragments that are isolated in a sea of pastures and *Cryptomeria japonica* plantations. Most of the locations will be under severe threat in the next 10 years due to the aggressive spread of the invasive plants *Hedychium gardnerianum* and *Pittosporum undulatum.*

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The species occurs in native (dominated by *Laurus azorica* and *Juniperus brevifolia*) and exotic (e.g. *Eucaliptus* spp.) forests of several islands (Flores, Terceira, Pico, S. Miguel and Santa Maria), with an altitudinal range between 350 and 1000 m. This species was an inhabitant of ancient azorean laurel forests and successfully adapted itself to changed conditions of life (habitat transformation) (Israelson 1985). This species feeds mostly on fungi. Based on seasonal data from SLAM traps obtained in several islands between 2012 and 2016, the adults are active all year, being more abundant in spring and summer.

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 (Triantis et al. 2010, Terzopoulou et al. 2015). Currently invasive plants *Hydrangea macrophylla*, *Pittosporum undulatum* and *Hedychium gardnerianum* are changing some of the areas and decreasing the quality of the habitat. 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 regionally protected areas (Natural Parks of Flores, Terceira, S. Miguel and Sta. Maria). 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. A habitat management plan is needed and anticipated to be developed during the coming years. Formal education and awareness is needed to allow future investments in restored habitats invaded by invasive plants. Further research is needed into its ecology and life history in order to obtain information on population size, distribution and trends. It is necessary a monitoring plan for the invertebrate community in the habitat in order to

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contribute to the conservation of this species. 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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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
0. Root -> 16. Introduced vegetation	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		
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.2. Named species (Pittosporum undulatum)	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 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 (Hydrangea macrophylla)	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 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
Action Recovery plan: No
Systematic monitoring scheme: No
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
Area based regional management plan: No

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

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Research Needed
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): 64
Continuing decline in area of occupancy (AOO): Yes
Estimated extent of occurrence (EOO) (km²): 34000
Continuing decline in extent of occurrence (EOO): No
Extreme fluctuations in extent of occurrence (EOO): Unknown
Number of Locations: 11
Continuing decline in number of locations: Yes
Lower elevation limit (m): 350
Upper elevation limit (m): 1000
Population
Continuing decline of mature individuals: Yes
Population severely fragmented: Yes
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 0.5
Movement patterns: Not a Migrant

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The IUCN Red List Partnership

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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.