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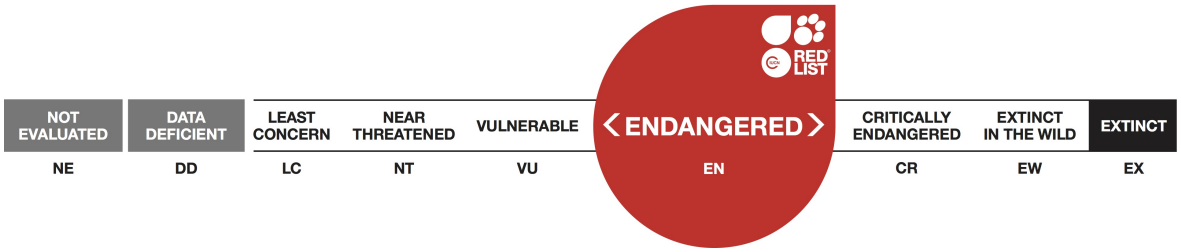
Scope: Global
Language: English

Calacalles droueti, True weevil

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



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Coleoptera	Curculionidae

Taxon Name: *Calacalles droueti* (Crotch, 1867)

Synonym(s):

- *Acalles droueti* Crotch, 1867

Common Name(s):

- English: True weevil, Snout beetle, Weevil

Taxonomic Source(s):

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

Assessment Information

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

Year Published: 2018

Date Assessed: December 17, 2016

Justification:

Calacalles droueti is an endemic species present in Flores, Faial and Pico islands, but considered extinct in Flores (Azores, Portugal). It has a relatively small extent of occurrence (EOO = 113 km²) that does not include Flores island and a small area of occupancy (EOO = 28 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 the invasions of non-native plants. The species occurs only at seven locations and is associated with an endemic rare plant (*Euphorbia stygiana* subsp. *stygiana*). 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:

Calacalles droueti is an endemic species present in Flores, Faial and Pico islands, but considered extinct in Flores (Azores, Portugal) (Borges *et al.* 2010), known from Natural Forest Reserves of Caldeira do Faial (Faial) and Lagoa do Caiado (Pico). The extent of occurrence (EOO) is 113 km² and the maximum estimated area of occupancy (AOO) is 28 km².

Country Occurrence:

Native: Portugal (Azores)

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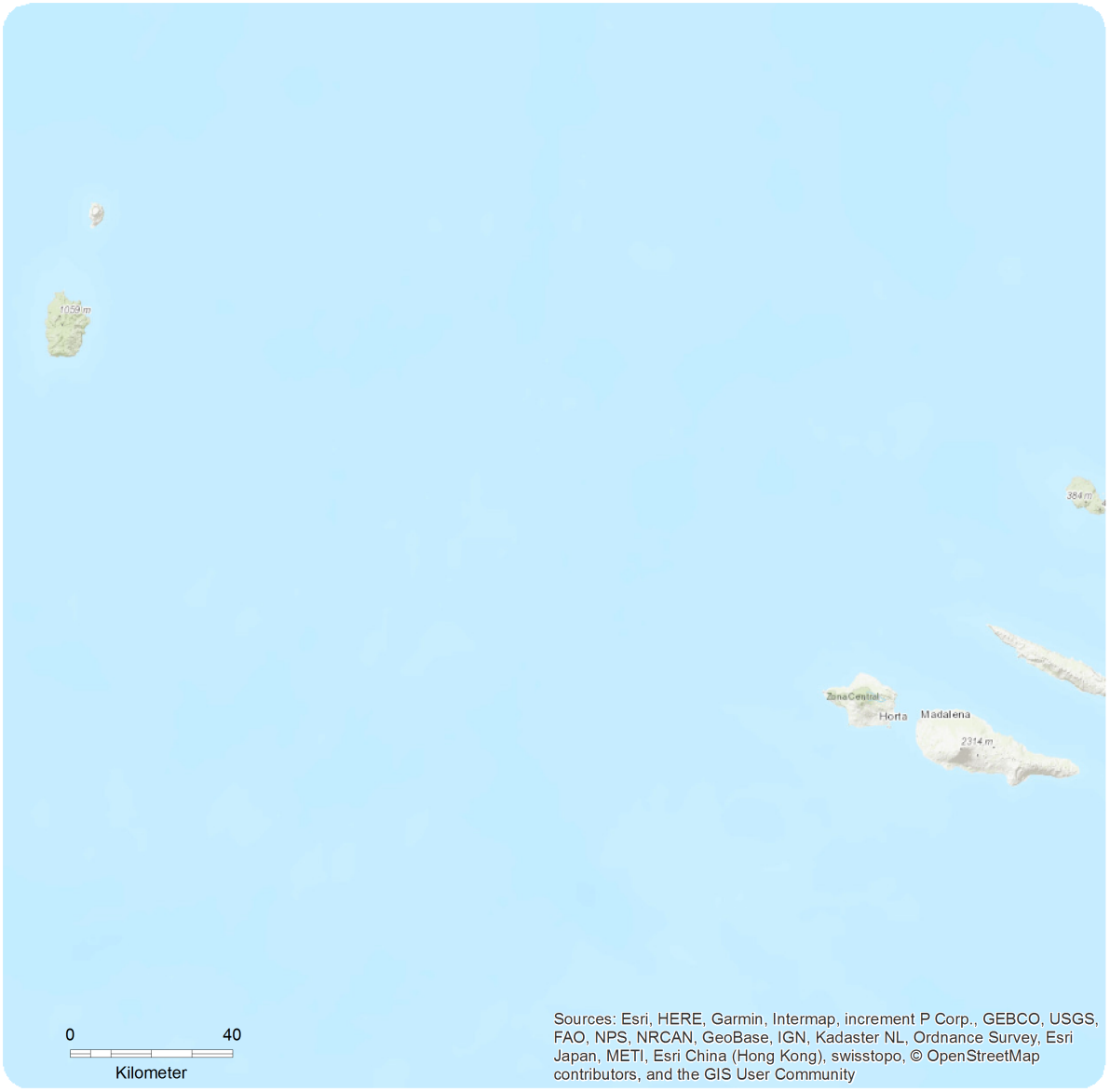
Distribution Map

Calacalles droueti



Range

Extant (resident)

Possibly Extinct

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 very rare and only known from a single subpopulation in Faial island and several subpopulations in Pico island. A continuing decline in the number of mature individuals is inferred due to host-plant rarity (*Euphorbia stygiana* subsp. *stygiana*). This species is assessed here as severely fragmented as at least 50% of its population can be found in subpopulations 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 fragments that are isolated in a matrix of pastures.

Current Population Trend: Decreasing

Habitat and Ecology **(see Appendix for additional information)**

The species occurs in native forests of high altitude in the Faial and Pico islands (Azores), with an altitudinal range between 600 and 1200 m. Adults and larvae are nocturnal herbivores and feed of plant tissues of *Euphorbia stygiana* subsp. *stygiana*.

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 (*Hedychium gardnerianum*) are changing some of the areas and decreasing the quality of the habitat, 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). Other important threat is the extreme rarity of the host plant.

Conservation Actions **(see Appendix for additional information)**

The species is protected by regional law (RAA 2012). Its habitat is in regionally protected areas (Natural Parks of Faial and Pico). A habitat management plan is needed and anticipated to be developed during the coming years. The conservation of the host plant is critical. Since this species occurs in relict native Azorean forests and associated also with a very rare plant, it is suggested that some awareness measures should be put in practice. Further research is needed into its ecology and life history in order to find extant specimens in other sites with the host plant, and obtain information on population size, distribution and trends. It is also necessary an area-based management plan and a monitoring plan for the invertebrate community in the habitat in order to contribute to perform a species potential recovery plan. 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. & Amorim, I.R.

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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

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		
12. Other options -> 12.1. Other threat	Ongoing	Whole (>90%)	Very rapid declines	High impact: 9
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
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

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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): 91-100
Invasive species control or prevention: Yes
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
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): 28
Continuing decline in area of occupancy (AOO): Yes

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Distribution
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km^2): 113
Continuing decline in extent of occurrence (EOO): Yes
Extreme fluctuations in extent of occurrence (EOO): Unknown
Number of Locations: 7
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: Unknown
Lower elevation limit (m): 600
Upper elevation limit (m): 1200
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): 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.