The IUCN Red List of Threatened Species™
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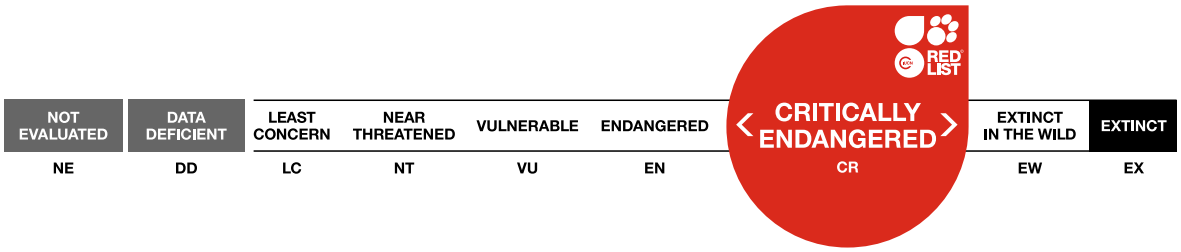
Polydesmus ribeiraensis

Assessment by: Nunes, R. & Borges, P.A.V.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Diplopoda	Polydesmida	Polydesmidae

Scientific Name: *Polydesmus ribeiraensis* Demange, 1970

Assessment Information

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

Year Published: 2020

Date Assessed: March 30, 2018

Justification:

Polydesmus ribeiraensis is endemic to São Miguel (Azores, Portugal). It has a very small Extent of Occurrence (EOO = 16 km²) and Area of Occupancy (AOO = 16 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 and displacement by exotic millipedes. Increasing tourism in the island might also impact its habitat, being a scenic destination. The species occurs only at one location, and so it is assessed as Critically Endangered (CR). We suggest as future measures of conservation: (1) regular monitoring of the species; (2) control of invasive species namely *Hedychium gardnerianum*, and (3) measures to mitigate possible impacts from increasing tourism.

Geographic Range

Range Description:

Polydesmus ribeiraensis is a single-island endemic millipede species restricted to S. Miguel island (Azores, Portugal) (Borges *et al.* 2010), known from a single disturbed location. The Extent of Occurrence (EOO) is 16 km² and the maximum estimated Area of Occupancy (AOO) is 16 km².

Country Occurrence:

Native, Extant (resident): Portugal (Azores)

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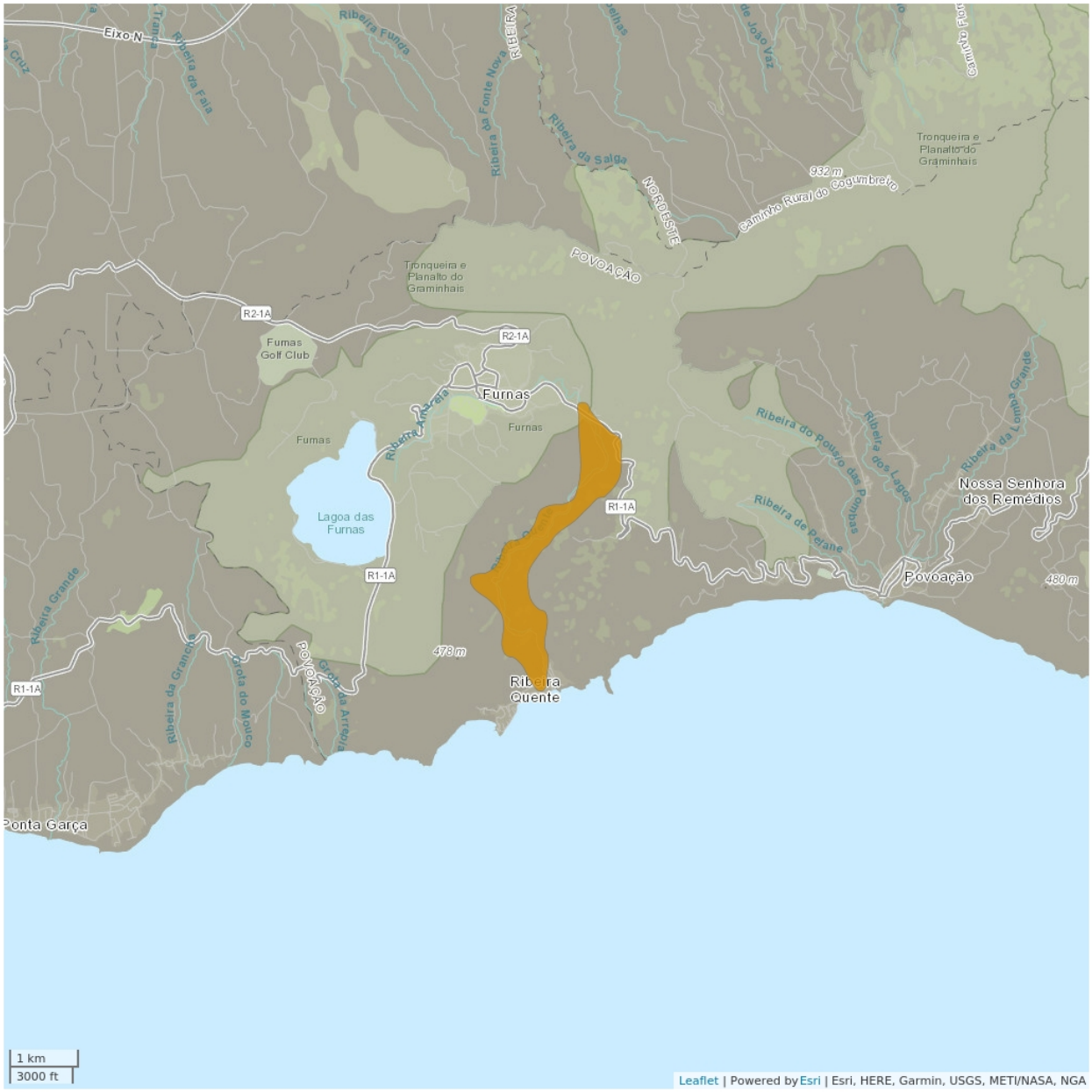
Distribution Map



Legend

EXTANT (RESIDENT)

Compiled by:

Azorean Biodiversity Group 2018

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. A continuing decline in the number of mature individuals is inferred from the ongoing habitat degradation due to invasions of alien plants (*Hedychium gardnerianum*) and other arthropods (*Ommatoithus moreletii*).

Current Population Trend: Decreasing

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

Little is known of the ecology and traits of this species. It is present in the moist soil and leaf litter in Ribeira Quente, a valley with streams and rivulets of geothermal origin. This area is degraded and under threat by invasive plant species and human activities.

Systems: Terrestrial

Threats **(see Appendix for additional information)**

In the past, the species has probably strongly declined due to major historical land use changes in surrounding areas. The most important ongoing threat to this species is the spread of invasive plants (*Hedychium gardnerianum*) which are changing the habitat and soil structure, and displacement by invasive millipede species like *Ommatoithus moreletii*. Human activities like tourism and urbanisation are also affecting part of the habitat. Based on Ferreira *et al.* (2016) the habitat quality will also decline as a consequence of climate change (increasing number of droughts, and habitat shifting and alteration).

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

The species is not protected by regional law, but its habitat is partially in a regionally protected area (Natural Park of S. Miguel). Degraded habitats should be restored and a strategy needs to be developed to address the future threat from climate change. A habitat management plan is needed and one is anticipated to be developed during the coming years. Education and awareness is also needed to avoid negative impacts of touristic activities. Further research is needed into its ecology and life history and to obtain information on population size, distribution and trends; and it is also necessary to develop an area-based management plan and a monitoring plan for the invertebrate community in this habitat in aid in the production of a potential species 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): Nunes, R. & Borges, P.A.V.

Reviewer(s): Russell, N.

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Bibliography

Borges, P.A.V., Costa, A., Cunha, R., Gabriel, R., Gonçalves, V., Martins, A.F., Melo, I., Parente, M., Raposeiro, P., Rodrigues, P., Santos, R.S., Silva, L., Vieira, P. and Vieira, V. 2010. *A list of the terrestrial and marine biota from the Azores*. Princípia, Cascais.

Ferreira, M.T., Cardoso, P., Borges, P.A.V., Gabriel, R., Azevedo, E.B., Reis, F., Araújo, M.B. and Elias, R.B. 2016. Effects of climate change on the distribution of indigenous species in oceanic islands (Azores). *Climate Change* 138(3-4): 603-615.

Gaspar, C., Gaston, K.J., Borges, P.A.V. and Cardoso, P. 2011. Selection of priority areas for arthropod conservation in the Azores archipelago. *Journal of Insect Conservation* 15: 671–684.

IUCN. 2020. The IUCN Red List of Threatened Species. Version 2020-3. Available at: www.iucnredlist.org. (Accessed: 10 December 2020).

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External Resources

For Supplementary Material, and 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
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	Resident	Suitable	Yes
5. Wetlands (inland) -> 5.12. Wetlands (inland) - Geothermal Wetlands	Resident	Suitable	Yes

Threats

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

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	Majority (50-90%)	Unknown	Unknown
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
6. Human intrusions & disturbance -> 6.1. Recreational activities	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	2. Species Stresses -> 2.2. Species disturbance		
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.1. Unspecified species	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	2. Species Stresses -> 2.3. Indirect species effects		
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.2. Named species (Hedychium gardnerianum)	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		
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 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects		
11. Climate change & severe weather -> 11.2. Droughts	Future	Whole (>90%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects		

Conservation Actions in Place

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

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Conservation Action in Place
In-place research and monitoring
Systematic monitoring scheme: Yes
In-place land/water protection
Occurs in at least one protected area: Yes

Conservation Actions Needed

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

Conservation Action Needed
2. Land/water management -> 2.1. Site/area management
2. Land/water management -> 2.2. Invasive/problematic species control
4. Education & awareness -> 4.3. Awareness & communications

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 -> 2.1. Species Action/Recovery Plan
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): 16
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km²): 16
Continuing decline in extent of occurrence (EOO): Yes
Extreme fluctuations in extent of occurrence (EOO): Unknown
Number of Locations: 1

Distribution
Continuing decline in number of locations: No
Extreme fluctuations in the number of locations: No
Lower elevation limit (m): 10
Upper elevation limit (m): 300
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

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.