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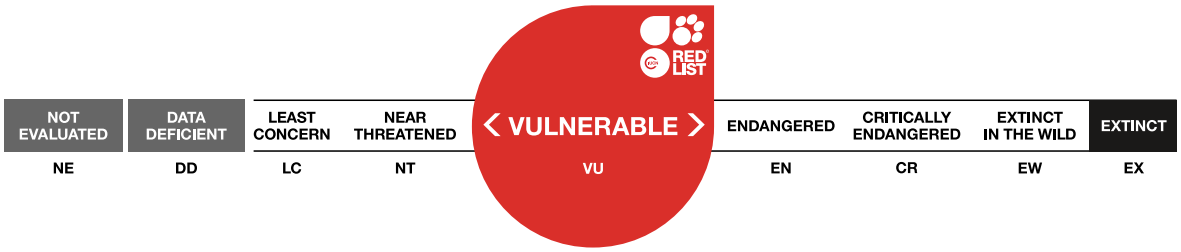
Porrhomma borgesi

Assessment by: Borges, P.A.V. & Cardoso, P.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Arachnida	Araneae	Linyphiidae

Scientific Name: *Porrhomma borgesi* Wunderlich, 2008

Taxonomic Source(s):

Platnick, N.I. 2014. The World Spider Catalog, Version 14.5. P. Merrett & H.D. Cameron (eds). American Museum of Natural History. Available at: http://research.amnh.org/iz/spiders/catalog/index.html. (Accessed: 31 March 2014).

Borges, P.A.V. and Wunderlich, J. 2008. Spider biodiversity patterns and their conservation in the Azorean archipelago, with descriptions of new species. *Systematics and Biodiversity* 6(2): 249-282.

Assessment Information

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

Year Published: 2020

Date Assessed: October 18, 2017

Justification:

Porrhomma borgesi is an endemic money spider species occurring on three islands of the Azorean archipelago: Pico, Terceira and S. Miguel (Azores, Portugal) (Borges *et al.* 2010). It has a small Extent of Occurrence (EOO = *ca*. 8,312-8,500 km²) and a very small area of occupancy (AOO = 72-124 km²). The species is only abundant in very pristine sites (e.g. sites with a high habitat quality index *sensu* Gaspar *et al.* 2011) and is rare in most sites. Currently, invasive plants (*Hedychium gardnerianum* and *Pittosporum undulatum*) are impacting 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. 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 inferred decline in AOO, the decline in the quality and structure of habitat in some islands and number of locations the species is assessed as Vulnerable (VU).

Geographic Range

Range Description:

Porrhomma borgesi is an endemic money spider species occurring on three islands of the Azorean archipelago: Pico, Terceira and S. Miguel (Azores, Portugal) (Borges *et al.* 2010). Within these three islands it is known from eight Natural Forest Reserves: Mistério da Prainha, Caveiro and Caiado (Natural Park of Pico); Biscoito da Ferraria, Pico Galhardo, Caldeira Sta. Bárbara e Mistérios Negros and Terra Brava (Natural Park of Terceira); Gallhardo (Natural Park of S. Miguel). The Extent of Occurrence (EOO) is ca. 8,312-8,500 km^2 and the estimated Area of Occupancy (AOO) is 72-124 km^2.

Country Occurrence:

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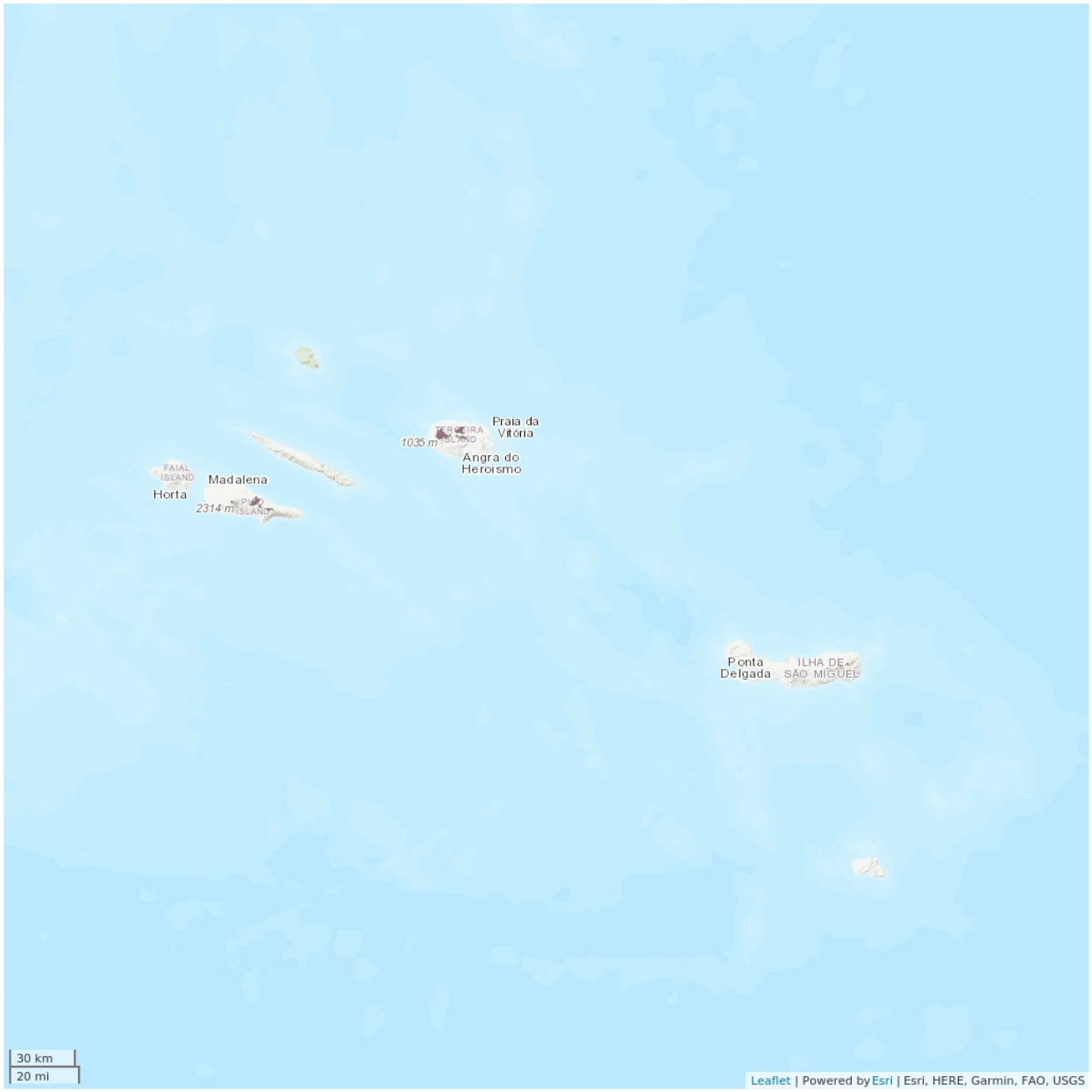
Native, Extant (resident): Portugal (Azores)

Distribution Map



Legend

EXTANT (RESIDENT)

POSSIBLY 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 only abundant in very pristine sites (e.g. sites with a high habitat quality index *sensu* Gaspar *et al*. 2011) and rare in most sites. Despite the fact that *Porrhomma borgesi* has recorded between 352 and 1,051 m in elevation, the species is particularly abundant only between 700 and 1,051 m. Many of the known sites are currently being invaded by invasive plants (e.g. *Hedychium gardnerianum*, *Pittosporum undulatum*); and a continuing decline in the number of mature individuals is estimated from monitoring schemes (Borges *et al.* 2016) and from the ongoing habitat degradation.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

Despite the fact that this species was recorded between 352 and 1,051 m elevation, *Porrhomma borgesi* is particularly abundant only between 700 and 1,051 m in very pristine sites (see Gaspar *et al*. 2011). This species builds its typical sheet-webs at ground level, usually using small holes in places with high humidity in dense forest.

Systems: Terrestrial

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). Currently, the rapid advance and expansion of invasive plants species is the major threat, particularly *Hedychium gardnerianum* but also *Pittosporum undulatum*, which are changing the structure of the forest and the cover of bryophytes and ferns in the soil, which impacts the species' habitat quality. Based on Ferreira *et al*. (2016) the habitat will further 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 in regionally protected areas (Natural Parks of Pico, Terceira and S. Miguel). Degraded areas, degraded due to invasive plant species, should be restored and a strategy needs to be developed to address the current threat posed by invasive species as well as the future threat of climate change. Formal education and awareness are needed to allow future investments in restored habitats invaded by invasive plants; while further research is needed into its ecology and life history in order to find additional specimens in other areas of native or exotic forest and to obtain adequate information on population size, distribution and trends. An area-based management plan is also necessary for the most disturbed sites including invertebrate monitoring to contribute to 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

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Authority/Authorities: IUCN SSC Spider and Scorpion Specialist Group

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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.

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Disclaimer

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

Threats

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

Threat	Timing	Scope	Severity	Impact Score
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 -> 1.1. Ecosystem conversion 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 (Pittosporum undulatum)	Ongoing	Minority (50%)	Rapid declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 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		
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	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 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
11. Climate change & severe weather -> 11.2. Droughts	Future	Whole (>90%)	Rapid declines	Medium impact: 6
	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 Action in Place
In-place research and monitoring
Action Recovery Plan: No
Systematic monitoring scheme: No
In-place land/water protection
Conservation sites identified: Yes, over entire range
Percentage of population protected by PAs: 91-100
Area based regional management plan: No
Occurs in at least one protected area: Yes

Conservation Actions Needed

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

Conservation Action Needed
1. Land/water protection -> 1.1. Site/area protection
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
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
1. Research -> 1.5. Threats
2. Conservation Planning -> 2.2. Area-based Management Plan
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

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Distribution
Estimated area of occupancy (AOO) (km²): 72-124
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km²): 8312-8500
Continuing decline in extent of occurrence (EOO): Yes
Extreme fluctuations in extent of occurrence (EOO): No
Number of Locations: 8
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: No
Lower elevation limit (m): 352
Upper elevation limit (m): 1,051
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

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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.