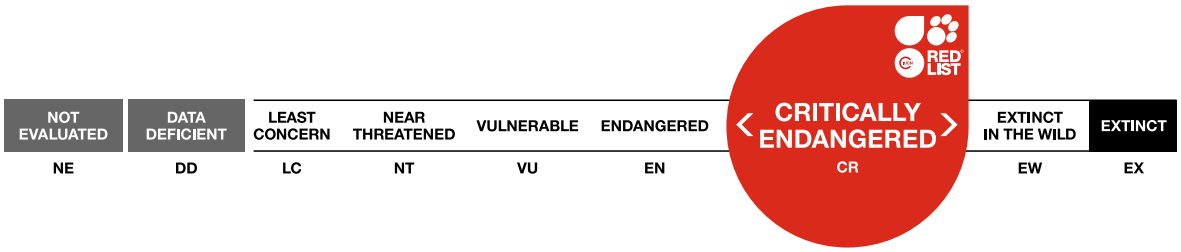
The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2020: T58063163A58063265
Scope(s): Global
Language: English

Canariphantes junipericola

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



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Citation: Borges, P.A.V. & Cardoso, P. 2020. *Canariphantes junipericola*. *The IUCN Red List of Threatened Species* 2020: e.T58063163A58063265. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T58063163A58063265.en

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Arachnida	Araneae	Linyphiidae

Scientific Name: *Canariphantes junipericola* Crespo & Bosmans, 2014

Taxonomic Source(s):

Crespo, L.C., Bosmans, R., Cardoso, P. and Borges, P.A.V. 2014. On three endemic species of the linyphiid spider genus *Canariphantes* Wunderlich, 1992 (Araneae, Linyphiidae) from the Azores archipelago. *Zootaxa* 3841: 403–417.

Assessment Information

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

Year Published: 2020

Date Assessed: October 14, 2017

Justification:

Canariphantes junipericola is a single-island endemic species restricted to Flores (Azores, Portugal) (Crespo *et al.* 2014). It has a very small Extent of Occurrence (EOO = 4-12 km²) and Area of Occupancy (AOO = 4-12 km²), but the value is assumed to be at the upper end of this estimate. The species is rare and only known from a single subpopulation in the Natural Forest Reserve of Caldeiras Funda e Rasa. The surrounding area is highly invaded by alien plants. In the past, the species has probably strongly declined due to changes in habitat size and quality. Currently, invasive plants 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. Therefore, we suggest as future measures of conservation: (1) regular monitoring of the species; and (2) control of invasive plant species. Based upon the small geographic range of the species and continuing decline of its habitat area and quality, it is assessed as Critically Endangered.

Geographic Range

Range Description:

Canariphantes junipericola is a single-island endemic species restricted to Flores (Azores, Portugal) (Crespo *et al.* 2014), known from Natural Forest Reserve of Caldeiras Funda e Rasa (Natural Park of Flores). The Extent of Occurrence (EOO) is 4-12 km^2 and the maximum estimated Area of Occupancy (AOO) is 12 km^2.

Country Occurrence:

Native, Extant (resident): Portugal (Azores)

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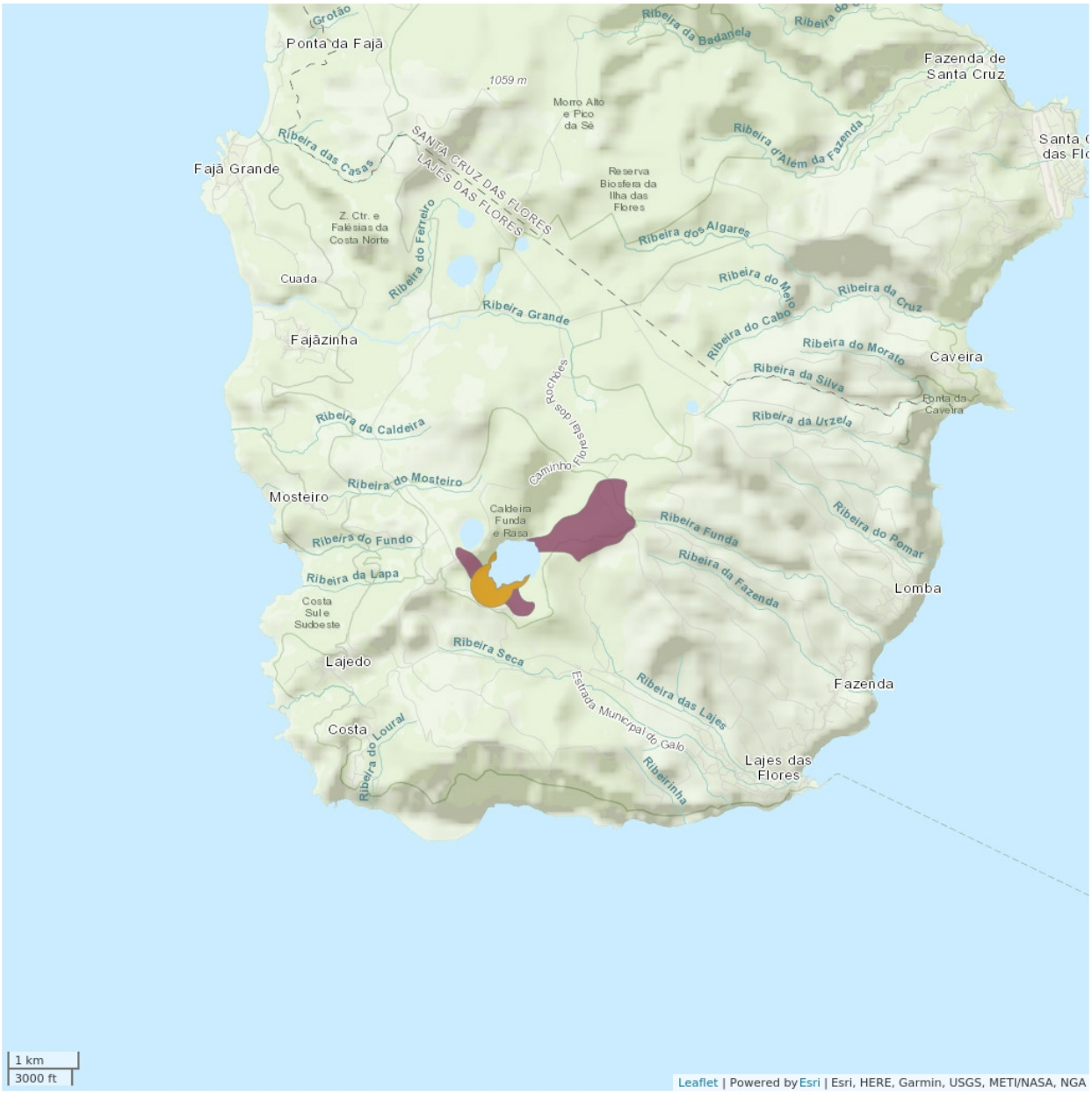
Distribution Map



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 rare, and only known from a single subpopulation on Flores island. The main patch is very small and currently being invaded by invasive plants (*Hedychium gardnerianum* and *Hydrangea macrophylla*). The surrounding area is already heavily invaded by the same invasive plants and parts are occupied by *Cryptomeria japonica* plantations. A continuing decline in the number of mature individuals is inferred 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)

This species occurs in very a small fragment of native forest on Flores island (Azores), dominated by *Juniperus brevifolia* (Crespo *et al.* 2014) with an altitudinal range between 367 and 659 m. Adults were collected in summer (Crespo *et al.* 2014). This species builds typical sheet-webs at ground level, with few or little herbaceous cover, due to a closed canopy.

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, invasive plants (*Hydrangea macrophylla, Hedychium gardnerianum* and *Rubus ulmifolius*) are changing the structure of the forest and the cover of bryophytes and ferns in the soil which will impact 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). The management of surrounding habitats, namely for *Cryptomeria japonica* plantations, may have also an impact on individuals.

Conservation Actions (see Appendix for additional information)

The species is not protected by regional law, however, suitable habitat is in four regionally protected areas (Natural Parks of Faial, Pico, São Jorge and Terceira). Degraded areas, degraded due to invasive plant species should be restored and a strategy needs to be developed to address the current threat by invasive species and the future threat by climate change. Formal education and awareness is 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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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
2. Agriculture & aquaculture -> 2.2. Wood & pulp plantations -> 2.2.2. Agro-industry plantations	Ongoing	Minority (50%)	Rapid declines	Medium impact: 6
	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 (Rubus ulmifolius)	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 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	Whole (>90%)	Rapid declines	High impact: 8
	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 (Hydrangea macrophylla)	Ongoing	Whole (>90%)	Rapid declines	High impact: 8
	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%)	Rapid declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.1. Species mortality		

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		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 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.1. Species mortality		

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: Yes
In-place land/water protection
Conservation sites identified: Yes, over entire range
Percentage of population protected by PAs: 91-100
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
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.1. Legislation -> 5.1.3. 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

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): 4-12
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km²): 4-12
Continuing decline in extent of occurrence (EOO): Yes
Extreme fluctuations in extent of occurrence (EOO): No
Number of Locations: 1
Continuing decline in number of locations: No
Extreme fluctuations in the number of locations: No
Lower elevation limit (m): 367
Upper elevation limit (m): 659
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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