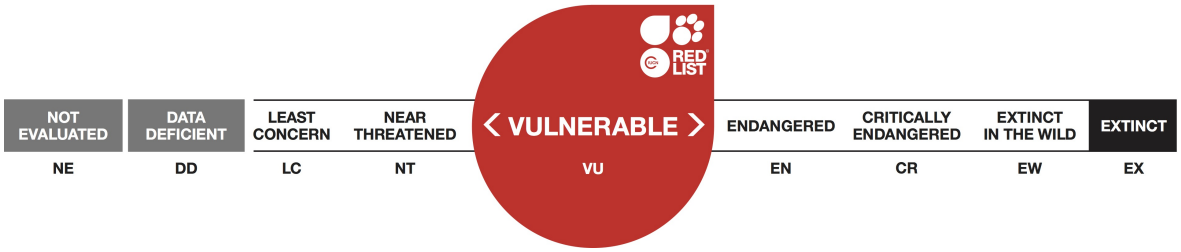
The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T97226172A99166844
Scope: Global
Language: English

Scoparia carvalhoi, Moth

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



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Citation: Vieira, V. & Borges, P.A.V. 2018. *Scoparia carvalhoi*. The IUCN Red List of Threatened Species 2018: e.T97226172A99166844. http://dx.doi.org/10.2305/IUCN.UK.2018-1.RLTS.T97226172A99166844.en

Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Lepidoptera	Crambidae

Taxon Name: *Scoparia carvalhoi* Nuss, Karsholt & Meyer, 1997

Common Name(s):

- English: Moth

Taxonomic Source(s):

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

Assessment Information

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

Year Published: 2018

Date Assessed: March 10, 2017

Justification:

Scoparia carvalhoi is an endemic species present in the islands of Faial, Pico, Terceira and Santa Maria (Azores, Portugal) (Nuss *et al.* 1997, Borges *et al.* 2010), known from native forest. It has a relatively large extent of occurrence (EOO = 14,320 km²) and a small area of occupancy (AOO = 44 km²). The species is abundant and known from at least six fragmented subpopulations. In the past, the species has probably strongly declined due to changes in habitat size and quality. The main threat to this species will be the habitat decline as a consequence of invasive species and climate change (Ferreira *et al.* 2016). Based upon the small area of occupancy, decreasing quality of the habitat and low number of subpopulations it is assessed as Vulnerable.

Geographic Range

Range Description:

Scoparia carvalhoi is an endemic species present in the islands of Faial, Pico, Terceira and Santa Maria (Azores, Portugal) (Nuss *et al.* 1997, Borges *et al.* 2010), known from native forest. Within these four islands it is known from two Natural Forest Reserves of Caldeira do Faial (Faial) and Pico Alto (S. Maria). The extent of occurrence (EOO) is 14,320 km² and the maximum estimated area of occupancy (AOO) is 44 km².

Country Occurrence:

Native: Portugal (Azores)

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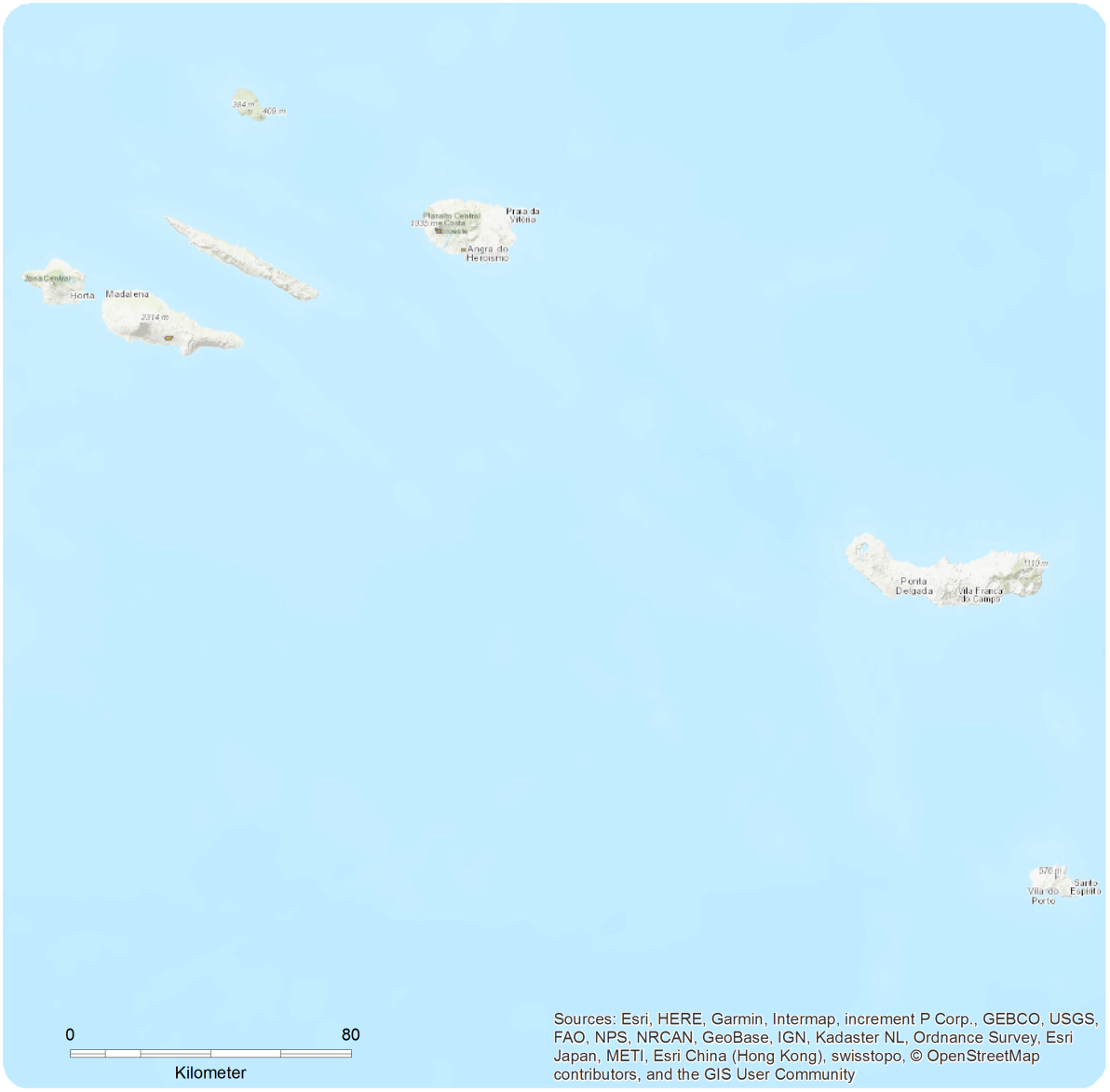
Distribution Map

Scoparia carvalhoi

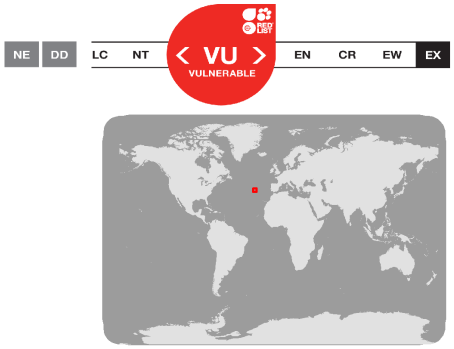


Range

Extant (resident)

Compiled by:

Paulo Borges



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

*Scoparia carvalhoi i*s restricted but relatively abundant in some of the locations with native forest. We assume a stable population, but with the tendency to decline in the number of individuals that is inferred from the ongoing habitat degradation due to invasions of alien plants and from human activities.

Current Population Trend: Stable

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

The species occurs in native forests of medium to high altitude in the Faial, Pico, Terceira and Santa Maria islands (Azores). Larvae are herbivores; the moth flies in June and July (Nuss *et al.* 1997), with one or two broods per year. Altitudinal range: 100-700 m.

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, mostly the creation of pastures (Triantis *et al.* 2010). Currently invasive plants *Pittosporum undulatum* and *Hedychium gardnerianum* are changing some of the areas and decreasing the quality of the habitat. These changes are decreasing the relative cover of endemic plants and changing the soil cover (decreasing the cover of bryophytes and ferns). 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 Faial, Pico, Terceira and Sta. Maria). Degraded habitats should be restored and a strategy needs to be developed to address the future threat by climate change. Further research is needed into its ecology and life history in order to find extant specimens. It is necessary to create a monitoring plan for the invertebrate community in the habitat in order to contribute to the conservation of this species. A habitat management plan is needed and anticipated to be developed during the coming years. Monitoring every ten years using the BALA protocol will inform about habitat quality (see e.g. Gaspar *et al*. 2010).

Credits

Assessor(s): Vieira, V. & Borges, P.A.V.

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Triantis, K.A., Borges, P.A.V., Ladle, R.J., Hortal, J., Cardoso, P., Gaspar, C., Dinis, F., Mendonça, E., Silveira, L.M.A., Gabriel, R., Melo, C., Santos, A.M.C., Amorim, I.R., Ribeiro, S.P., Serrano, A.R.M., Quartau, J.A. and Whittaker, R.J. 2010. Extinction debt on oceanic islands. *Ecography* 33: 285-294.

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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
3. Shrubland -> 3.4. Shrubland - Temperate	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 (Pittosporum undulatum)	Ongoing	-	-	-
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.2. Named species (Hedychium gardnerianum)	Ongoing	-	-	-

Conservation Actions in Place

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

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Conservation Actions in Place
In-Place Research, Monitoring and Planning
Systematic monitoring scheme: Yes
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over part of range
Occur in at least one PA: 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
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km²): 44
Continuing decline in area of occupancy (AOO): No
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km²): 14320
Continuing decline in extent of occurrence (EOO): No

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Distribution
Extreme fluctuations in extent of occurrence (EOO): Unknown
Number of Locations: 6
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: Unknown
Lower elevation limit (m): 100
Upper elevation limit (m): 700
Population
Continuing decline of mature individuals: No
Population severely fragmented: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 0.5
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.