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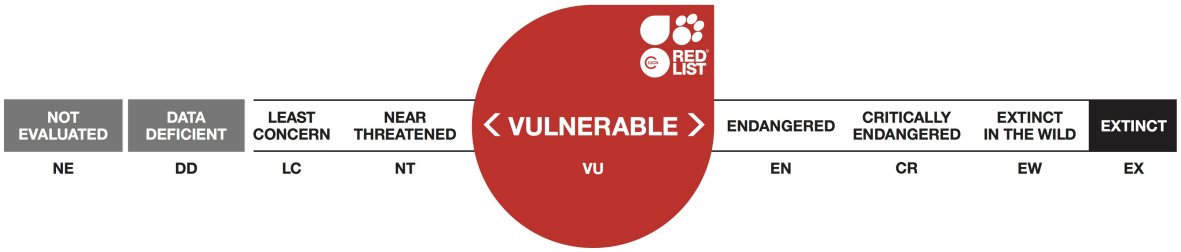
Phlogophora furnasi, Owlet Moth

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



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Lepidoptera	Noctuidae

Taxon Name: *Phlogophora furnasi* Pinker, 1971

Common Name(s):

- English: Owlet Moth, Underwing Moth

Taxonomic Source(s):

De Jong, Y., Verbeek, M., Michelsen, V., Bjørn, P.P., Los, W., Steeman, F., Bailly, N., Basire, C., Chylarecki, P., Stloukal, E., Hagedorn, G., Wetzel, F.T., Glöckler, F., Kroupa, A., Korb, G., Hoffmann, A., Häuser, C., Kohlbecker, A., Müller, A., Güntsch, A., Stoev, P. and Penev, L. 2014. Fauna Europaea – all European animal species on the web. *Biodiversity Data Journal* 2: e4034. DOI: 10.3897/BDJ.2.e4034.

Assessment Information

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

Year Published: 2018

Date Assessed: March 19, 2017

Justification:

Phlogophora furnasi is an endemic species present in Pico, S. Jorge, Terceira and S. Miguel islands (Azores, Portugal) (Borges *et al.* 2010). It has a relatively large extent of occurrence (EOO = ca 10,000 km²), but a small area of occupancy (AOO = 72 km²). The species was originally abundant and known from at least six fragmented populations. Currently *P. furnasi* is under threat due to degradation of the habitat by cattle (Wagner 2015), but also due to invasive plants *Pittosporum undulatum* and *Hedychium gardnerianum* that are changing some of the areas and decreasing the quality of the habitat. 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:

Phlogophora furnasi is an endemic species present in Pico, S. Jorge, Terceira and S. Miguel islands (Azores, Portugal) (Borges *et al.* 2010), known originally from sites with native vegetation (e.g., Caldeira Guilherme Moniz -Terceira; Pico Maria Pires - S. Jorge; Ribeiras - Pico; Serra Água de Pau - São Miguel), but currently some of those locations have highly modified vegetation. The extent of occurrence (EOO) is ca 10,000 km² and the maximum estimated area of occupancy (AOO) is 72 km².

Country Occurrence:

Native: Portugal (Azores)

Distribution Map

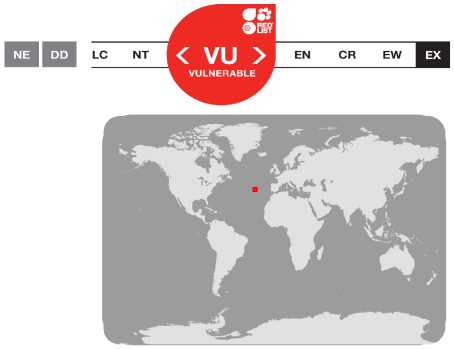
Phlogophora furnasi

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

This species was particularly abundant in Pico, S. Jorge, Terceira and S. Miguel islands, occurring mostly in the native and naturalised vegetation at medium and high elevations of these islands. However, changes in the vegetation in the last 30 years are threatening this species. Therefore we suspect that the population is decreasing.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

Phlogophora furnasi occurs particularly in native vegetation (*Calluna vulgaris*, *Erica azorica*, mosses and *Festuca francoi*) of open native woodlands. The larvae are mostly abundant in humid, shady, wind-protected places in northern exposition with only small *Calluna vulgaris* bushes between *ca* 500 and 1000 m Asl, and in low numbers also in embankments and edges of streets through allochthonous coniferous forests and other places (Wagner 2015). This species has several generations per year (Wagner 2015). Altitudinal range: 200-1000 m.

Systems: Terrestrial

Use and Trade

The 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 *P. furnasi* is under threat due to degradation of the habitat by cattle (Wagner 2015), but also due to invasive plants *Pittosporum undulatum* and *Hedychium gardnerianum* that 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 Park of Terceira). Further research is needed into its ecology and life history in order to find extant specimens. Degraded habitats should be restored and a strategy needs to be developed to address the future threat by climate change. 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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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. & 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: 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. 2018. The IUCN Red List of Threatened Species. Version 2018-1. Available at: www.iucnredlist.org. (Accessed: 28 June 2018).

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.

Wagner, W. 2015. A contribution to the knowledge of the larval ecology of the Azorean Phlogophora (Lepidoptera: Noctuidae) with taxonomic notes on the complex of P. interrupta (P. interrupta jarmilae Saldaitis & Ivinskis, 2006, stat. rev.). *Nachrichten des Entomologischen Vereins Apollo, Neue Folge* 36(2/3): 80–92.

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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?
3. Shrubland -> 3.4. Shrubland - Temperate	Resident	Suitable	Yes
4. Grassland -> 4.4. Grassland - Temperate	-	Marginal	-
0. Root -> 16. Introduced vegetation	Resident	Marginal	-

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 -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	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	Majority (50-90%)	Rapid declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 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		

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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 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): 61-70

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): 72
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): 10000
Continuing decline in extent of occurrence (EOO): No
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): 200
Upper elevation limit (m): 1000
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): 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.