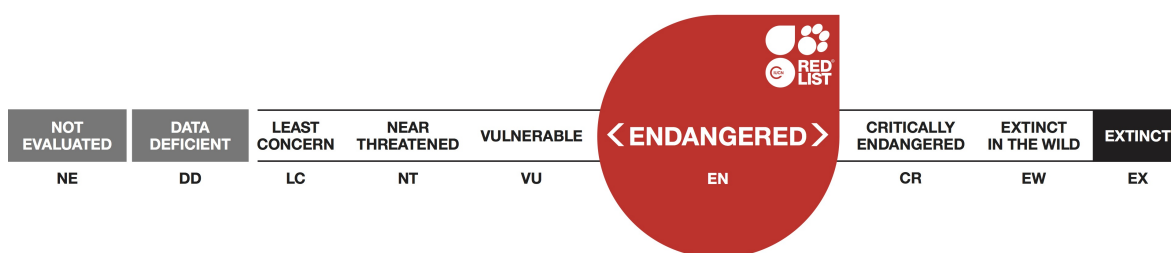


## *Graphania granti*, Owlet Moth

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:** *Graphania granti* (Warren, 1905)

### Synonym(s):

- *Mamestra granti* Warren, 1905
- *Melanchra granti* (Warren, 1905)
- *Polia granti* Warren, 1940

### Common Name(s):

- English: Owlet Moth, Underwing Moth

### Taxonomic Source(s):

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

## Assessment Information

**Red List Category & Criteria:** Endangered B2ab(i,ii,iii,iv,v) [ver 3.1](#)

**Year Published:** 2018

**Date Assessed:** March 15, 2017

### Justification:

*Graphania granti* is an endemic species present in Pico, Terceira and S. Miguel islands (Azores, Portugal) (Borges *et al.* 2010). It has a large extent of occurrence (EOO = ca 7,800 km<sup>2</sup>) and a small area of occupancy (AOO = 40 km<sup>2</sup>). In the past, the species has probably strongly declined due to changes in habitat size and quality. The species occurs preferably in the native forests of the Pico, Terceira and São Miguel islands (Azores), surrounded by plantations of exotic trees and pastures. Currently invasive plants *Pittosporum undulatum* and *Hedychium gardnerianum* are changing some of the areas and decreasing the quality of the habitat. Human activities in at least two of the historical locations (Furnas, S. Miguel; area of Gruta dos Balcões, Terceira) promoted major changes in the habitat in the last 50 years with major reductions of native vegetation. Based on Ferreira *et al.* (2016) the habitat will further decline as a consequence of climate change. Based upon the small area of occupancy and decrease of habitat quality this species is assessed as Endangered.

## Geographic Range

### Range Description:

*Melanchra granti* is an endemic species occurring in Pico, Terceira and S. Miguel islands (Azores, Portugal) (Borges *et al.* 2010), known from remnant laurel forest. The extent of occurrence (EOO) is ca 7,800 km<sup>2</sup> and the maximum estimated area of occupancy (AOO) is 40 km<sup>2</sup>.

### Country Occurrence:


**Native:** Portugal (Azores)

# Distribution Map

*Graphania granti*

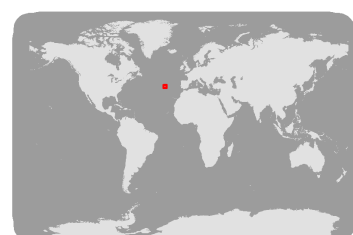


## Range

 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.



## Population

The species is scattered and rare in Pico, Terceira and São Miguel islands (Azores), occurring mostly in uplands wet biotopes with native vegetation (larvae associated with grasses and mosses). There is a continuing decline in the number of mature individuals, based on the ongoing threats. This species is assessed here as being severely fragmented as at least 50% of its population can be found in subpopulations that are 1) smaller than would be required to support a viable population, and 2) separated from other habitat patches by a large distance. In fact, the species occurs in fragments that are isolated in a matrix of pastures.

**Current Population Trend:** Decreasing

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

The species occurs preferably in the native forests of the Pico, Terceira and São Miguel islands (Azores), surrounded by plantations of exotic trees and pastures. This species is probably an univoltine species, but the life cycle is unknown. Some adults were captured in light traps from January to July (Carvalho et al. 1999). The host plant of the larva is unknown. Altitudinal range: 200-600 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). Human activities in at least two of the historical locations (Furnas, S. Miguel; area of Gruta dos Balcões, Terceira) promoted major changes in the habitat in the last 50 years with major reductions of native vegetation. 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 only one regionally protected area (Natural Park of Terceira). Further research is needed into its ecology and life history in order to learn about the ecological requirements of the species and the feeding substrate of the larva, and 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 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.  
**Reviewer(s):** Danielczak, A.  
**Contributor(s):** Nunes, R. & Lamelas-López, L.

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## External Resources

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# Appendix

## Habitats

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

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.4. Forest - Temperate	Resident	Suitable	Yes
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 -> 2.2. 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	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 2. Species Stresses -> 2.2. Species disturbance		

## Conservation Actions in Place

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

<b>Conservation Actions in Place</b>
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
Percentage of population protected by PAs (0-100): 71-80

## Conservation Actions Needed

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

<b>Conservation Actions Needed</b>
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>)

<b>Research Needed</b>
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

<b>Distribution</b>
Estimated area of occupancy (AOO) (km <sup>2</sup> ): 40
Continuing decline in area of occupancy (AOO): Yes

<b>Distribution</b>
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km <sup>2</sup> ): 7800
Continuing decline in extent of occurrence (EOO): Yes
Extreme fluctuations in extent of occurrence (EOO): Unknown
Number of Locations: 4
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: Unknown
Lower elevation limit (m): 200
Upper elevation limit (m): 600
<b>Population</b>
Continuing decline of mature individuals: Yes
Population severely fragmented: Yes
<b>Habitats and Ecology</b>
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 1
Movement patterns: Not a Migrant

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