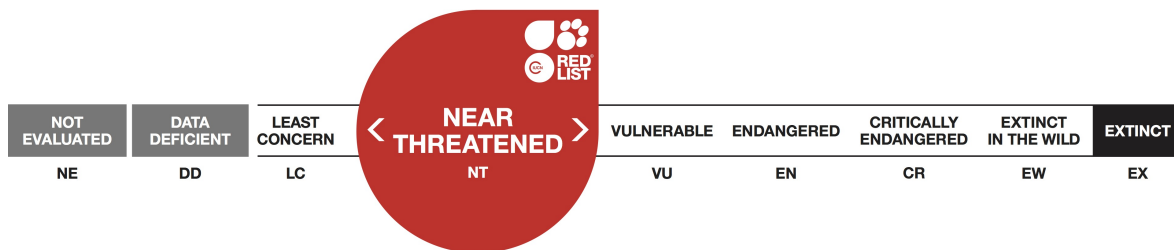


Argyresthia atlanticella, Small ermine moth

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



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Lepidoptera	Argyresthiidae

Taxon Name: *Argyresthia atlanticella* Rebel, 1940

Common Name(s):

- English: Small ermine 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., Wetzell, 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: Near Threatened [ver 3.1](#)

Year Published: 2018

Date Assessed: March 26, 2017

Justification:

Argyresthia atlanticella is an endemic species present in the islands of Corvo, Flores, Faial, Pico, Graciosa, S. Jorge, Terceira, S. Miguel and Santa Maria (Azores, Portugal) (Borges et al. 2010). It has a large area of occupancy (AOO = 580 km²) and a very large extent of occurrence (EOO = ca 44,400 km²). This is a widespread and generalist phytophagous species, highly abundant in Azorean endemic Ericaceae shrubs. It occurs in eighteen Natural Forest Reserves, but is associated with some plants for which there are some conflicts with farmers (*Erica azorica*). Based on Ferreira et al. (2016) the habitat will decline as a consequence of climate change (increasing number of droughts). The species is assessed as Near Threatened (NT), since the species has an AOO of 576 km² (i.e. < 2,000 km²), and there is a continuing decline in the number of locations.

Geographic Range

Range Description:

Argyresthia atlanticella is an endemic species present in the islands of Corvo, Flores, Faial, Pico, Graciosa, S. Jorge, Terceira, S. Miguel and Santa Maria (Azores, Portugal) (Borges *et al.* 2010), known from several native plants of native forest. Within these islands it is known from all eighteen Natural Forest Reserves: Caldeiras Funda e Rasa and Morro Alto e Pico da Sé (Flores); Caldeira do Faial and Cabeço do Fogo (Faial); Mistério da Prainha, Caveiro and Caiado (Pico); Pico Pinheiro and Topo (S. Jorge); Biscoito da Ferraria, Pico Galhardo, Caldeira Guilherme Moniz, Caldeira Sta. Bárbara e Mistérios Negros and Terra Brava (Terceira); Atalhada, Graminhais and Pico da Vara (S. Miguel) and Pico Alto (Sta. Maria). The extent of occurrence (EOO) is ca 44,400 km² and the maximum estimated area of occupancy

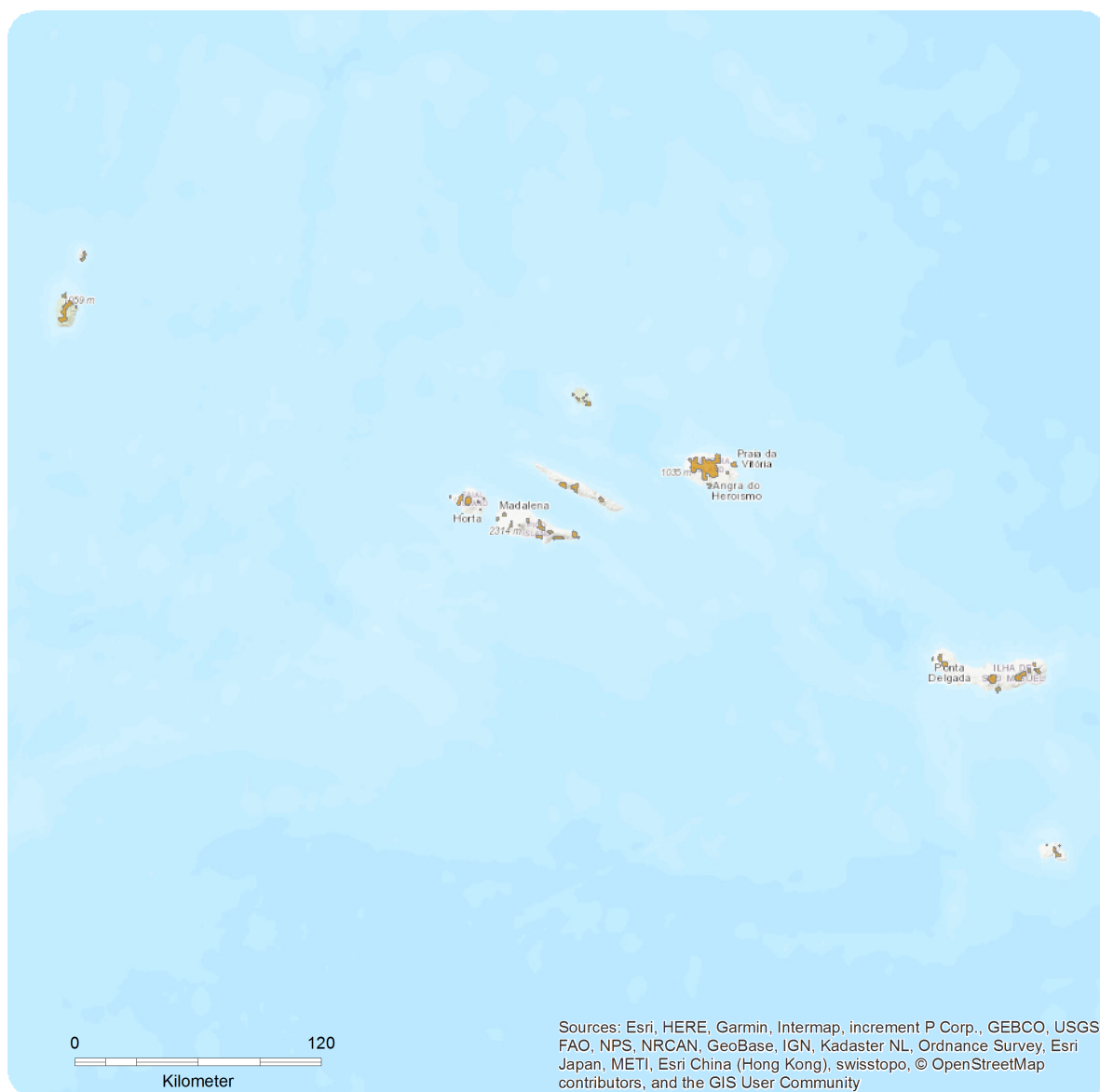
(AOO) is *ca* 580 km².

Country Occurrence:

Native: Portugal (Azores)

Distribution Map

Argyresthia atlanticella

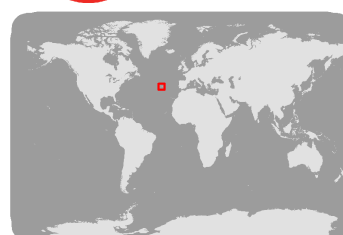


Range

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 a widespread and highly abundant species in native plants (e.g. Ericaceae, Cupressaceae and Polygonaceae) of several habitats all Azorean islands. It is probably the most common Lepidoptera species in the Azores. This species has probably a stable population.

Current Population Trend: Stable

Habitat and Ecology (see Appendix for additional information)

Argyresthia atlanticella occurs in native forests and disturbed biotopes of several Azorean islands. According to Silva *et al.* (1995) and Silva and Tavares (1995), larvae are generalist polyphagous herbivores and develop on *M. faya* male flowers and green fruits from April until August; they were also associated with *Erica azorica* and *Vaccinium cylindraceum*, being particularly abundant in *Erica azorica* (Ericaceae) where larvae also develop. Adults and larvae were found associated with *E. azorica* throughout the year. This species has a continuous development with several generations per year (multivoltine species). Altitudinal range: 0-1800 m.

Systems: Terrestrial

Use and Trade

The species is not utilised.

Threats (see Appendix for additional information)

In the past, the species has probably declined due to changes in habitat size and quality, mostly the creation of pastures (Triantis *et al.* 2010). The main host plant *Erica azorica* is an early succession plant that tends to invade semi-natural pastures creating conflicts with farming. 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 and alteration). Since the Azores are located on the mid-Atlantic ridge, they are also prone to the effects of volcanoes and earthquakes with potential deleterious effects on the existing populations,

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 Corvo, Faial, Flores, Graciosa, Pico, S. Jorge, Terceira, S. Miguel and Sta. Maria). Degraded habitats outside protected areas 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 understand its dynamics, namely at larvae stage in different endemic trees where it occurs. It is necessary a monitoring plan for the invertebrate community in the habitat in order to contribute to the conservation of this species. Monitoring every ten years using the BALA protocol will inform about habitat quality (see e.g. Gaspar *et al.* 2010). A taxonomic revision of Azorean *Argyresthia*, which should also include a comparison of the DNA barcodes, is needed to show how many species are present in the Azores islands.

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
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 -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	Minority (50%)	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		
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>)

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
Percentage of population protected by PAs (0-100): 21-30
Invasive species control or prevention: Yes

Conservation Actions Needed

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

Conservation Actions Needed
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.2. Invasive/problematic species control
2. Land/water management -> 2.3. Habitat & natural process restoration

Research Needed

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

Research Needed
1. Research -> 1.1. Taxonomy
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) (km ²): 580
Continuing decline in area of occupancy (AOO): No
Extreme fluctuations in area of occupancy (AOO): No

Distribution
Estimated extent of occurrence (EOO) (km ²): 44400
Continuing decline in extent of occurrence (EOO): No
Extreme fluctuations in extent of occurrence (EOO): Unknown
Number of Locations: 58
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: Unknown
Lower elevation limit (m): 0
Upper elevation limit (m): 1800
Population
Continuing decline of mature individuals: No
Population severely fragmented: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: No
Generation Length (years): 0.5
Movement patterns: Not a Migrant

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