

Mniophilosoma obscurum, Leaf-beetle

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Coleoptera	Chrysomelidae

Taxon Name: *Mniophilosoma obscurum* Gillerfors, 1986

Common Name(s):

- English: Leaf-beetle

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: Critically Endangered B1ab(ii,iii,v)+2ab(ii,iii,v) [ver 3.1](#)

Year Published: 2017

Date Assessed: December 15, 2016

Justification:

Mniophilosoma obscurum is an endemic species from Flores (Azores, Portugal). It has a very small extent of occurrence (EOO = 13 km²) and area of occupancy (AOO = 4 km²). The species is rare and only known from a single subpopulation in Flores island. The surrounding area is protected and it is well preserved (Gaspar et al. 2011). In the past, the species has probably strongly declined due to changes in habitat size and quality. Currently invasive plants *Hydrangea macrophylla* and *Hedychium gardnerianum* 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 (increasing number of droughts). Therefore, we suggest as future measures of conservation: (1) regular monitoring of the species; and (2) control of invasive species namely *Hedychium gardnerianum*. 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:

Mniophilosoma obscurum is a single island endemic species restricted to Flores (Azores, Portugal) (Borges *et al.* 2010), known from Natural Forest Reserve of Morro Alto e Pico da Sé. The extent of occurrence (EOO) is 13 km² and the maximum estimated area of occupancy (AOO) is 4 km².

Country Occurrence:


Native: Portugal (Azores)

Distribution Map

Mniophilosoma obscurum



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 rare and only known from a single subpopulation in Flores island. The surrounding area is protected and it is well preserved with a high Index of Biotic Integrity (Gaspar et al. 2011). However, part of the area of occupancy is starting to be impacted by invasive plants (*Hydrangea macrophylla* and *Hedychium gardnerianum*) that are disrupting the quality of forest ground with potential decline in the number of individuals.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

This species occurs in a small fragment of native forest in Flores island (Azores), dominated by *Juniperus brevifolia*, *Calluna* spp. shrubs and *Sphagnum* spp. moss (Gillerfors 1986), with an altitudinal range between 560 and 880 m. Adults and larvae are herbivores and feed on all sorts of plant tissue.

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 (Triantis et al. 2010, Terzopoulou et al. 2015). Currently invasive plants *Hydrangea macrophylla* and *Hedychium gardnerianum* 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 (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 a regionally protected area (Natural Park of Flores). 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. Formal education and awareness is needed to allow future investments in restored habitats invaded by invasive plants. Further research is needed into its ecology and life history in order to obtain information on population size, distribution and trends. A monitoring every ten years using the BALA protocol will inform about population trends and habitat quality (see e.g. Gaspar et al. 2011).

Credits

Assessor(s): Borges, P.A.V. & Lamelas-López, L.

Reviewer(s): Danielczak, A.

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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
5. Wetlands (inland) -> 5.4. Wetlands (inland) - Bogs, Marshes, Swamps, Fens, Peatlands	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 (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 Land/Water Protection and Management
Conservation sites identified: Yes, over entire range
Occur in at least one PA: Yes
Percentage of population protected by PAs (0-100): 91-100

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) (km ²): 4
Continuing decline in area of occupancy (AOO): Yes
Estimated extent of occurrence (EOO) (km ²): 13
Continuing decline in extent of occurrence (EOO): No
Number of Locations: 1
Continuing decline in number of locations: No

Distribution
Lower elevation limit (m): 560
Upper elevation limit (m): 880
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
Movement patterns: Not a Migrant

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