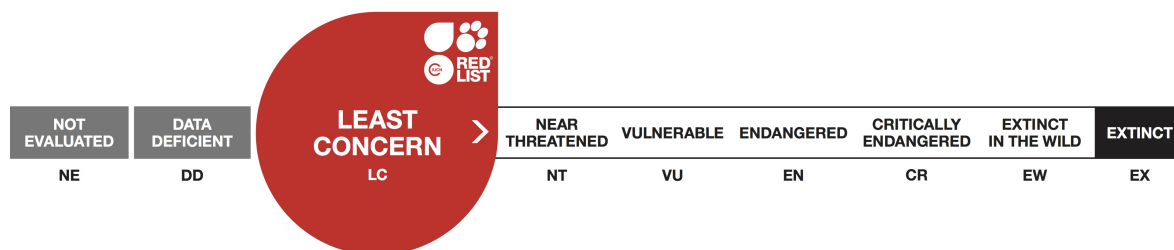


Hemerobius azoricus, Brown lacewings

Assessment by: Borges, P.A.V., Nunes, R. & Amorim, I.R.



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Citation: Borges, P.A.V., Nunes, R. & Amorim, I.R. 2018. *Hemerobius azoricus*. The IUCN Red List of Threatened Species 2018: e.T97240865A99166964. <http://dx.doi.org/10.2305/IUCN.UK.2018-1.RLTS.T97240865A99166964.en>

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Neuroptera	Hemerobiidae

Taxon Name: *Hemerobius azoricus* Tjeder, 1948

Common Name(s):

- English: Brown lacewings

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: Least Concern [ver 3.1](#)

Year Published: 2018

Date Assessed: February 26, 2017

Justification:

Hemerobius azoricus is an endemic brown lacewing species present in eight islands of the Azorean archipelago, not being recorded so far from Corvo (Azores, Portugal). It has a relatively large extent of occurrence (EOO = ca. 39,000 km²) but a relatively small area of occupancy (AOO = 260 km²). This species occurs mainly in Azorean native forest, but also in shrubland, exotic forest and other disturbed habitats (meadows, gardens). Based upon the large extent of occurrence, the good adaptation to human modified habitat and few threats, it is assessed as Least Concern (LC).

Geographic Range

Range Description:

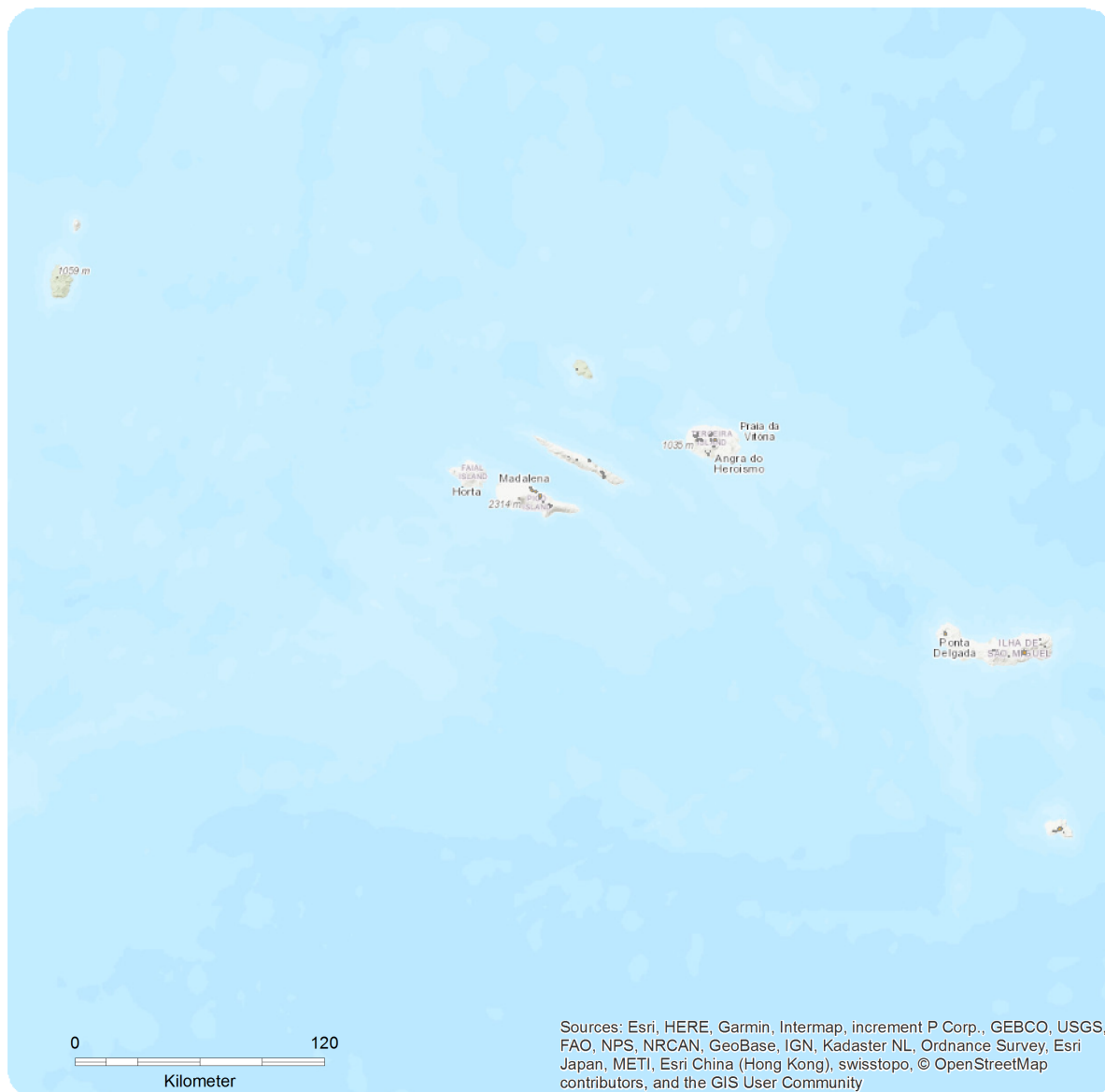
Hemerobius azoricus is an endemic brown lacewing species present in eight islands of the Azorean archipelago, not being recorded so far from Corvo (Azores, Portugal) (Borges *et al.* 2010). Within these eight islands it is known from seventeen Natural Forest Reserves: Caldeiras Funda e Rasa and Morro Alto e Pico da Sé (Flores); Caldeira do Faial (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 and Pico da Vara (S. Miguel) and Pico Alto (Sta. Maria). The extent of occurrence (EOO) is ca 39,000 km² and the maximum estimated area of occupancy (AOO) is 260 km².

Country Occurrence:

Native: Portugal (Azores)

Distribution Map

Hemerobius azoricus

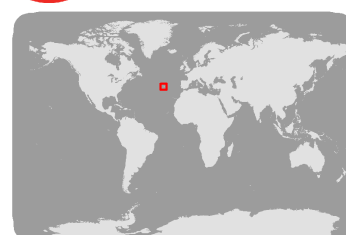


Range

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

Hemerobius azoricus is a widespread and abundant species. The species presents a stable population and exists in eight islands. We assume no impact for the population.

Current Population Trend: Stable

Habitat and Ecology (see Appendix for additional information)

This species occurs mainly in Azorean native forest, but also in shrubland, exotic forest and other disturbed habitats (meadows, gardens) (Ohm 1973). It is a canopy night active predacious species, with preference for soft-bodied insects. The larvae are also voracious predators. Altitudinal range: 50-1600 m. Based on seasonal data from SLAM traps obtained in several islands between 2012 and 2016, the adults are active all year, being most abundant in winter and spring (Borges *et al.* 2017).

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 (Triantis *et al.* 2010; Terzopoulou *et al.* 2015). The habitat will further decline as a consequence of climate change (increasing number of droughts) (Ferreira *et al.* 2016).

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, Flores, Pico, S. Jorge, Terceira, S. Miguel and Sta. Maria). 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): Borges, P.A.V., Nunes, R. & Amorim, I.R.

Reviewer(s): Danielczak, A.

Contributor(s): Lamelas-López, L.

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Borges, P.A.V., Nunes, R. & Amorim, I.R. 2018. *Hemerobius azoricus*. The IUCN Red List of Threatened Species 2018: e.T97240865A99166964. <http://dx.doi.org/10.2305/IUCN.UK.2018-1.RLTS.T97240865A99166964.en>

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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
14. Artificial/Terrestrial -> 14.4. Artificial/Terrestrial - Rural Gardens	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		

Conservation Actions in Place

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

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: No

Conservation Actions in Place
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
In-Place Education
Subject to recent education and awareness programmes: 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) (km ²): 260
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): Unknown

Distribution
Estimated extent of occurrence (EOO) (km ²): 39000
Continuing decline in extent of occurrence (EOO): No
Extreme fluctuations in extent of occurrence (EOO): Unknown
Number of Locations: 22
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: Unknown
Lower elevation limit (m): 50
Upper elevation limit (m): 1600
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): 1
Movement patterns: Not a Migrant

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