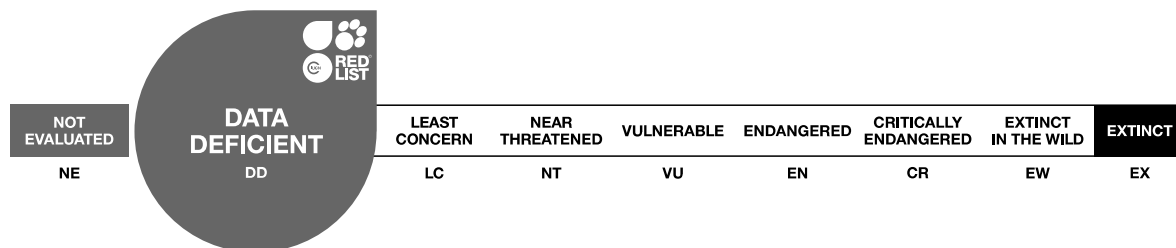


Limnellia helmuti

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



View on www.iucnredlist.org

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Diptera	Ephydriidae

Scientific Name: *Limnellia helmuti* Hollmann-Schirrmacher & Zatwarnicki, 1995

Assessment Information

Red List Category & Criteria: Data Deficient [ver 3.1](#)

Year Published: 2020

Date Assessed: March 26, 2018

Justification:

Limnellia helmuti is an endemic species of the Azores (Portugal), being present (at least historically) on S. Miguel island. From the historical data, this species has only been recorded in a disturbed area (Furnas) and would have a very small Extent of Occurrence (8 km²) and Area of Occupancy (8 km²). It is possible that this species has declined in the past as a result of human activity. However, the present situation of this species needs to be further assessed and further research is needed into its population, distribution, threats, ecology and life history; while conservation of native wet and boggy areas and other water bodies could potentially aid this species conservation. Based upon the lack of recent in data regarding this species population, distribution, threats and ecology, this species is assessed as Data Deficient (DD).

Geographic Range

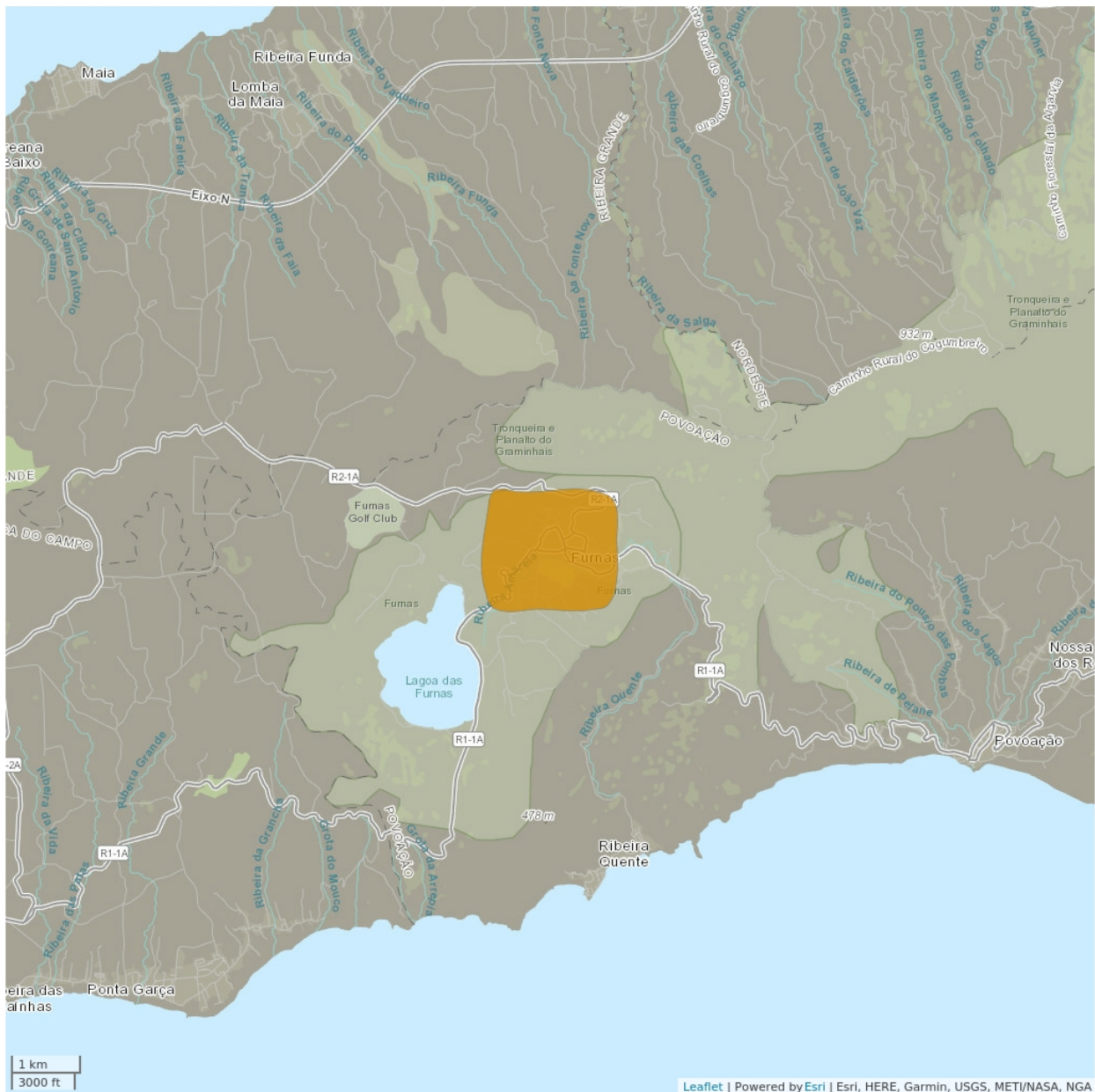
Range Description:

Limnellia helmuti is an Azorean-endemic species that was described from the island of S. Miguel (Azores, Portugal) (Borges *et al.* 2010), known from only one disturbed site (Furnas). Based on the description data, the Extent of Occurrence (EOO) would be *ca.* 8 km² and the Area of Occupancy (AOO) would be *ca.* 8 km². However, there is no recent information regarding the distribution of this species.

Country Occurrence:

Native, Extant (resident): Portugal (Azores)

Distribution Map

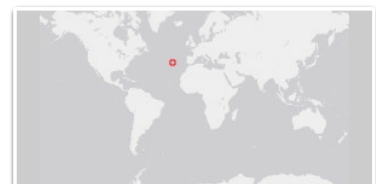
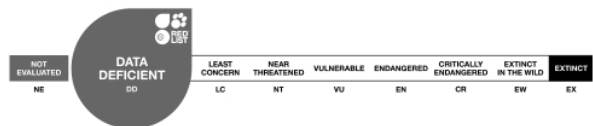


Legend

EXTANT (RESIDENT)

Compiled by:

Azorean Biodiversity Group 2018



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

Population

No current population size estimates exist for this species.

Current Population Trend: Unknown

Habitat and Ecology (see Appendix for additional information)

The ecology and traits of this species are unknown. Ephydriidae usually live in aquatic and semiaquatic habitats; maritime marshes, tidal salt pools, salt and alkaline lakes of arid regions (McAlpine *et al.* 1987). Larvae of most Ephydriidae are filter-feeders, feeding on microscopic algae bacteria and yeasts from the surrounding semiliquid medium. Others prefer dead and decaying animal tissue or excrement, while others are leaf miners. Larvae of some species are predators (McAlpine *et al.* 1987). This species was collected in a disturbed site, in the vicinity of several fumaroles and small lakes and rivulets of geothermal origin.

Systems: Terrestrial, Freshwater (=Inland waters)

Threats (see Appendix for additional information)

A lack of information regarding the present status of this species precludes an assessment of potential threats. Nevertheless, the ecology of other members of the Ephydriidae family suggests that this species might be affected by future habitat declines as a consequence of climate change (Ferreira *et al.* 2016) and increased droughts. Contamination of surface waters by agricultural and livestock runoff can also potentially affect this species, and given that the site where this species was collected includes geothermal lakes and hot springs, future violent geothermal events might as well affect it. This species was collected from a currently highly disturbed site, so past and present human disturbance and land use changes, coupled with habitat degradation by invasive species might have also affected it.

Conservation Actions (see Appendix for additional information)

The species is not protected by regional law; but historically at least, this species was present in one area that is currently highly disturbed, but included in the Natural Park of S. Miguel. The present situation of this species needs to be further assessed, and further research is needed into its population, distribution, threats, ecology and life history. From what is known of its habitat preferences, conservation of natural water bodies, of native wet and boggy areas and other wet habitats, together with problematic species control, could potentially aid this species' conservation.

Credits

Assessor(s): Nunes, R. & Borges, P.A.V.

Reviewer(s): Danielczak, A.

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External Resources

For [Supplementary Material](#), and 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?
5. Wetlands (inland) -> 5.12. Wetlands (inland) - Geothermal Wetlands	Resident	Suitable	Yes

Threats

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

Threat	Timing	Scope	Severity	Impact Score
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.1. Unspecified species	Ongoing	Unknown	Slow, significant declines	Unknown
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects		
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.1. Nutrient loads	Ongoing	Unknown	Slow, significant declines	Unknown
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.3. Herbicides and pesticides	Ongoing	Unknown	Rapid declines	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
10. Geological events -> 10.1. Volcanoes	Future	Unknown	Very rapid declines	Unknown
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.1. Species mortality		
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Future	Unknown	Slow, significant declines	Unknown
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects		
11. Climate change & severe weather -> 11.2. Droughts	Future	Unknown	Slow, significant declines	Unknown
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects		

Conservation Actions in Place

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

Conservation Action in Place
In-place research and monitoring

Conservation Action in Place
Action Recovery Plan: No
Systematic monitoring scheme: No
In-place land/water protection
Occurs in at least one protected area: Yes

Conservation Actions Needed

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

Conservation Action Needed
2. Land/water management -> 2.1. Site/area management
2. Land/water management -> 2.2. Invasive/problematic species control

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
1. Research -> 1.5. Threats
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 8
Continuing decline in area of occupancy (AOO): Unknown
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km ²): 8
Continuing decline in extent of occurrence (EOO): Unknown
Extreme fluctuations in extent of occurrence (EOO): Unknown
Continuing decline in number of locations: Unknown
Extreme fluctuations in the number of locations: Unknown
Lower elevation limit (m): 200

Distribution
Upper elevation limit (m): 400
Population
Continuing decline of mature individuals: Unknown
Extreme fluctuations: Unknown
Population severely fragmented: Unknown

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