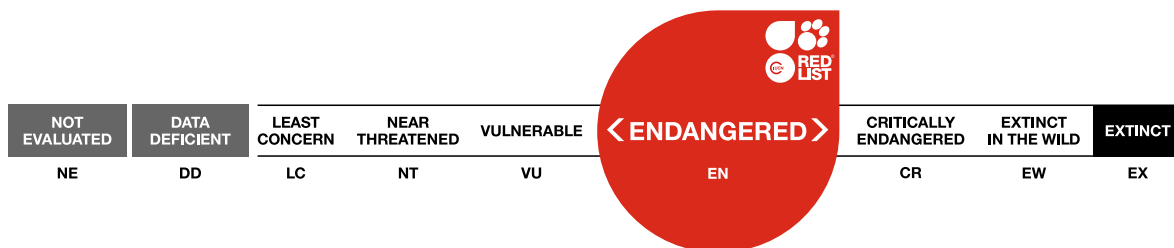


Encarsia estrellae

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	Hymenoptera	Aphelinidae

Scientific Name: *Encarsia estrellae* Manzari & Polaszek, 2002

Assessment Information

Red List Category & Criteria: Endangered B1ab(iii)+2ab(iii) [ver 3.1](#)

Year Published: 2021

Date Assessed: March 9, 2018

Justification:

Encarsia estrellae is an endemic species of the Azores (Azores, Portugal), present on at least S. Miguel and Pico islands. This species is present in areas of native and exotic vegetation, but some areas are now highly disturbed. From the current data available, this species has a limited Extent of Occurrence (1,776 km²) and small Area of Occupancy (68 km²). There is a continuing decline in the extent and quality of habitat as a result of the invasion of non-native plants and of human activity. There is little information regarding its population, distribution and threats, and limited information regarding ecology and life history (Manzari *et al.*, 2002). Therefore, we suggest as future measures of conservation: (1) regular monitoring of the species; and (2) control of invasive plant species. Based upon the known distribution and ecology, its small geographic range and the continuing decline of its habitat area and quality, this species is assessed as Endangered (EN).

Geographic Range

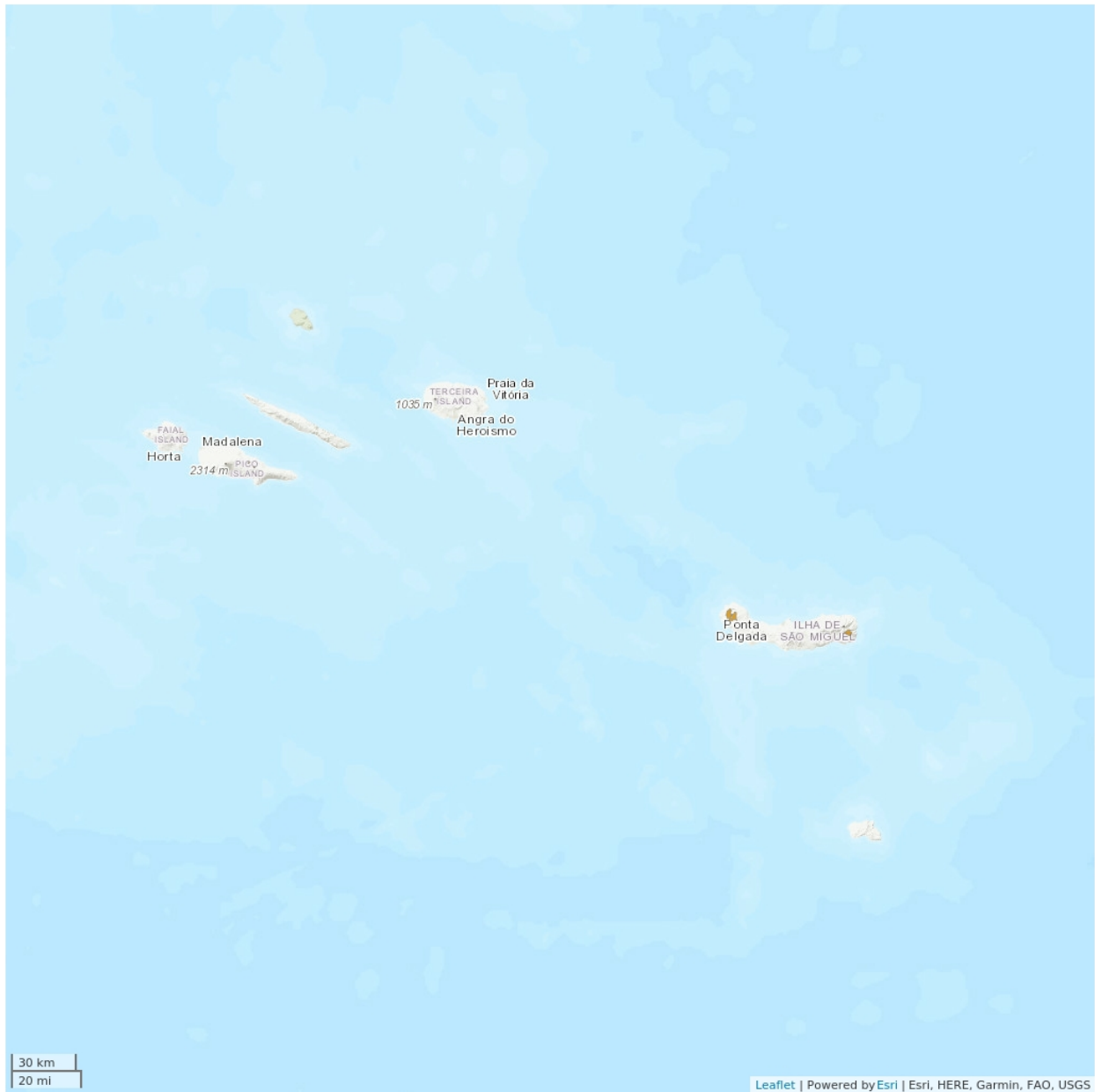
Range Description:

Encarsia estrellae is an Azorean-endemic aphelinid wasp that occurs in São Miguel and Pico (Borges *et al.* 2010). It does occur in one Natural Forest Reserve on each island: Pico da Vara (Tronqueira) in S. Miguel and from Lagoa do Caiado in Pico. The Extent of Occurrence (EOO) is *ca* 1,776 km² and the Area of Occupancy (AOO) is 68 km².

Country Occurrence:

Native, Extant (resident): Portugal (Azores)

Distribution Map

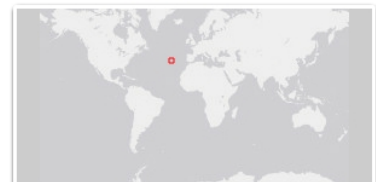


Legend

■ 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 mostly unknown. Apehinidae are mainly endoparasitoids, ectoparasitoids or hyperparasitoids of Aleyrodoidea, Aphidoidea, Auchenorrhyncha, Psylloidea and Coccoidea, but also of the eggs of Lepidoptera and Orthoptera and of the eggs, larvae and pupae of Diptera (Goulet and Huber 1993). *Encarsia* species are mainly parasitoids of Sternorrhyncha, particularly of the Aleyrodidae and Diaspididae. Most have heteronomous life histories with females acting as primary parasitoids and males developing as hyperparasitoids on the same or different species (Hunter and Woolley 2001). *Encarsia estrellae* specimens have been reared from *Aleyrodes singularis*, *Bemisia* sp. and from other unidentified host species (Manzari *et al.* 2002). Specimens of this species have been collected in areas of native and exotic vegetation, but also in areas becoming highly disturbed.

Systems: Terrestrial

Threats (see Appendix for additional information)

A lack of complete information regarding the distribution and population status of this species precludes a full assessment of potential threats. Nevertheless, the presence of this species in some areas highly disturbed by human presence, where major historical land use changes took place (Lagoa das Sete Cidades), or where there is an ongoing destruction of the native forest by the spread of invasive plants that are changing the habitat structure and promoting the spread of other exotic species (Tronqueira), might imply that this species is being affected by habitat degradation. Based on Ferreira *et al.* (2016), habitat declines as a consequence of climate change might also affect this species.

Conservation Actions (see Appendix for additional information)

The species is not protected by regional law, but it has been collected in some regionally protected areas (Natural Parks of São Miguel and Pico). The São Miguel Natural Park administration is currently starting control measures of the invasive plants. A LIFE PRIOLO project started with a restoration of degraded habitats, increasing the area of pristine forest. A habitat management plan is needed and one is anticipated to be developed during the coming years. Degraded habitats could also be restored in Lagoa das Sete Cidades. A strategy also needs to be developed to address the future threat from climate change; while further research is needed into this species population, distribution, threats, ecology and life history.

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?
1. Forest -> 1.4. Forest - Temperate	Resident	Unknown	-

Threats

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

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.3. Tourism & recreation areas	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
6. Human intrusions & disturbance -> 6.1. Recreational activities	Ongoing	Unknown	Slow, significant declines	Unknown
	Stresses:	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	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects		
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 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects		
11. Climate change & severe weather -> 11.2. Droughts	Future	Whole (>90%)	Slow, significant declines	Low impact: 5
	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
Action Recovery Plan: No
Systematic monitoring scheme: No
In-place land/water protection

Conservation Action in Place

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

2. Land/water management -> 2.3. Habitat & natural process restoration
--

Research Needed

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

Research Needed

1. Research -> 1.2. Population size, distribution & trends
--

1. Research -> 1.3. Life history & ecology
--

1. Research -> 1.5. Threats

2. Conservation Planning -> 2.2. Area-based Management Plan

3. Monitoring -> 3.1. Population trends

3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution

Estimated area of occupancy (AOO) (km ²): 68
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Continuing decline in area of occupancy (AOO): Unknown
--

Extreme fluctuations in area of occupancy (AOO): Unknown
--

Estimated extent of occurrence (EOO) (km ²): 1776

Continuing decline in extent of occurrence (EOO): Unknown

Extreme fluctuations in extent of occurrence (EOO): Unknown

Number of Locations: 3

Continuing decline in number of locations: No

Extreme fluctuations in the number of locations: Unknown
--

Lower elevation limit (m): 350

Distribution
Upper elevation limit (m): 850
Population
Continuing decline of mature individuals: Unknown
Extreme fluctuations: Unknown
Population severely fragmented: Unknown
Extreme fluctuations in subpopulations: Unknown
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes

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