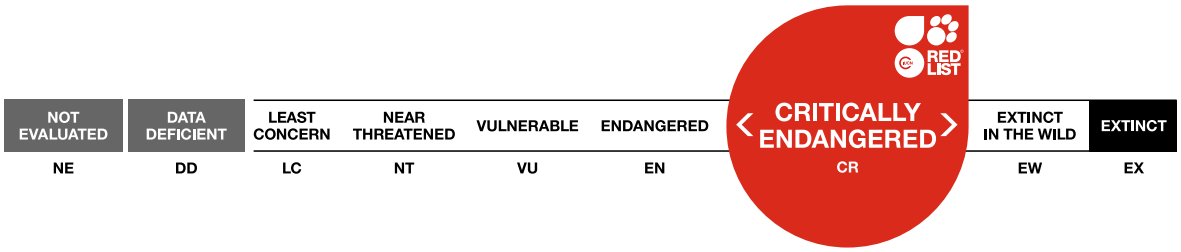
The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2020: T124929713A124930906
Scope(s): Global
Language: English

Chirothrips azoricus

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



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Citation: Nunes, R. & Borges, P.A.V. 2020. *Chirothrips azoricus*. *The IUCN Red List of Threatened Species* 2020: e.T124929713A124930906. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T124929713A124930906.en

Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Thysanoptera	Thripidae

Scientific Name: *Chirothrips azoricus* zur Strassen, 1981

Assessment Information

Red List Category & Criteria: Critically Endangered B1ab(i,ii,iii,v)+2ab(i,ii,iii,v) ver 3.1

Year Published: 2020

Date Assessed: March 30, 2018

Justification:

Chirothrips azoricus is endemic to São Miguel (Azores, Portugal). It has a very small Extent of Occurrence (EOO = 8 km²) and Area of Occupancy (AOO = 8 km²). There is a continuing decline in the EOO, AOO, extent and quality of habitat as well as the number of mature individuals as a result of the invasions of non-native plants; and, based on this threat, the species occurs only at one location. Therefore, the species is assessed as Critically Endangered (CR). We suggest as future conservation measures: (1) regular monitoring of the species; and (2) control of invasive species, namely *Hedychium gardnerianum* and *Clethra arborea*.

Geographic Range

Range Description:

Chirothrips azoricus is a single-island endemic thrips species restricted to S. Miguel island (Azores, Portugal) (Borges *et al.* 2010), known from the Natural Forest Reserve of Pico da Vara (Tronqueira). The Extent of Occurrence (EOO) is 8 km² and the maximum estimated Area of Occupancy (AOO) is 8 km².

Country Occurrence:

Native, Extant (resident): Portugal (Azores)

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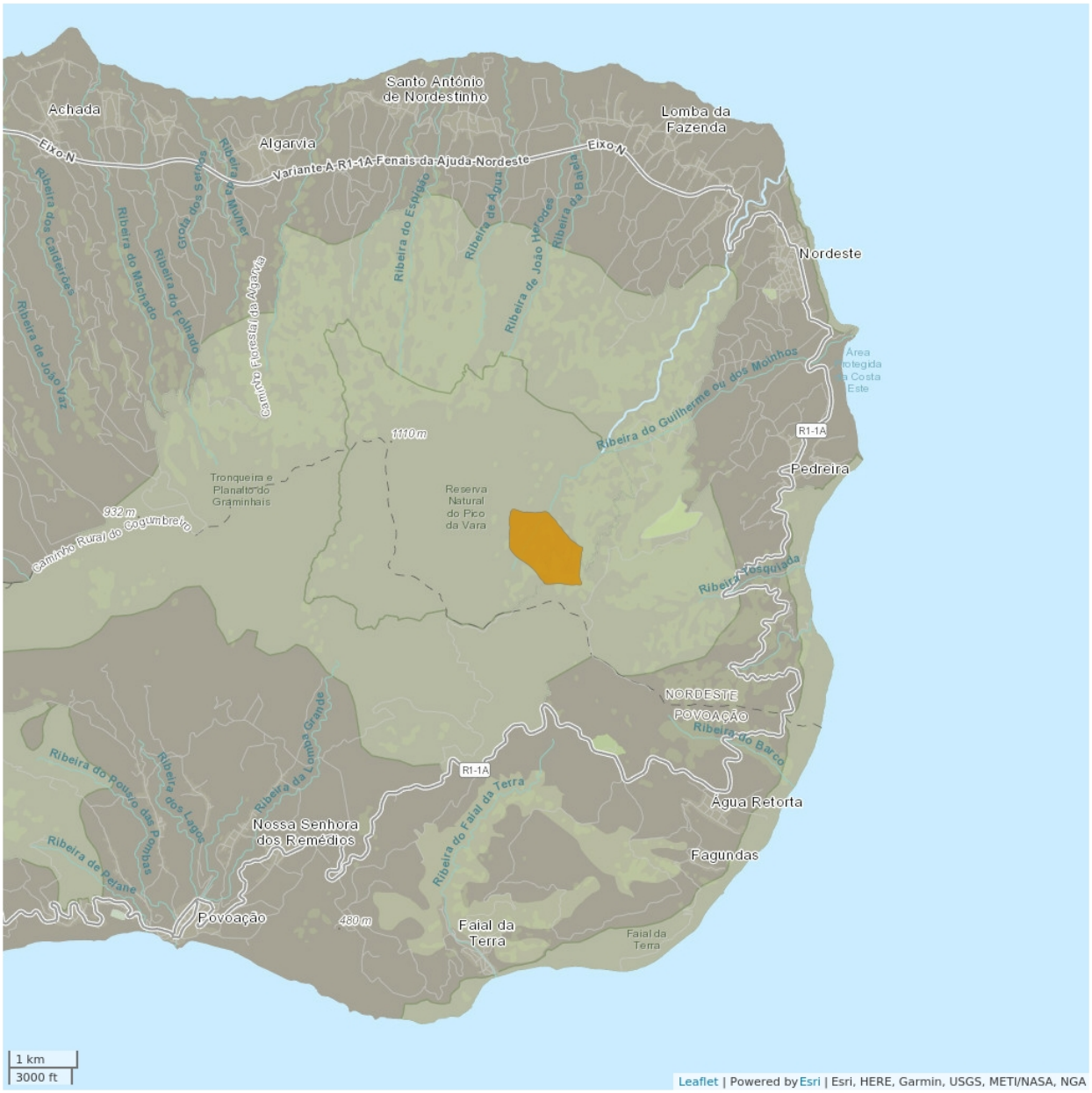
Distribution Map



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.

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Population

The species is rare and only known from a single subpopulation. A continuing decline in the number of mature individuals is inferred from the ongoing habitat degradation due to invasions of alien plants (*Hedychium gardnerianum, Clethra arborea*).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The ecology and traits of this species are unknown, but the larvae of known species of the genus *Chirothrips* develop only within the florets of Poaceae (Minaei and Mound 2010). This species occurs in the hyper-humid Azorean native forests, surrounded by plantations of exotic trees (*Cryptomeria japonica*) and under threat from invasive plant species.

Systems: Terrestrial

Threats (see Appendix for additional information)

In the past, the species has probably strongly declined due to changes in habitat size and quality. The most important ongoing threat to this species is the spread of invasive plants (*Hedychium gardnerianum* and *Clethra arborea*), which are changing the habitat structure and promoting the spread of other plants. Based on Ferreira *et al.* (2016) the habitat will decline as a consequence of climate change (increasing number of droughts and habitat shifting and alteration).

Conservation Actions (see Appendix for additional information)

The species is not protected by regional law, but its habitat is in a regionally protected area (S. Miguel Natural Park). 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, though, and one is anticipated to be developed during the coming years. Further research is needed into its ecology and life history in order to find extant specimens in additional natural forest areas of the S. Miguel island and to obtain information on population size, distribution and trends. It is also necessary to develop an area-based management plan and a monitoring plan for the invertebrate community in this habitat in aid in the production of a potential species recovery plan. Monitoring every ten years using the BALA protocol will inform about habitat quality (see e.g. Gaspar *et al.* 2011).

Credits

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

Reviewer(s): Russell, N.

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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	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 -> 8.1.2. Named species (Clethra arborea)	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		
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: Yes
Systematic monitoring scheme: Yes
In-place land/water protection
Occurs in at least one protected area: Yes

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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
2. Conservation Planning -> 2.1. Species Action/Recovery Plan
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) (km²): 8
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km²): 8
Continuing decline in extent of occurrence (EOO): Yes
Number of Locations: 1
Continuing decline in number of locations: No
Lower elevation limit (m): 500
Upper elevation limit (m): 700
Population
Continuing decline of mature individuals: Yes
Extreme fluctuations: Unknown
Population severely fragmented: No

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Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes

The IUCN Red List Partnership

The IUCN Red List of Threatened Species™ is produced and managed by the IUCN Global Species Programme, the IUCN Species Survival Commission (SSC) and The IUCN Red List Partnership.

The IUCN Red List Partners are: Arizona State University; BirdLife International; Botanic Gardens Conservation International; Conservation International; NatureServe; Royal Botanic Gardens, Kew; Sapienza University of Rome; Texas A&M University; and Zoological Society of London.