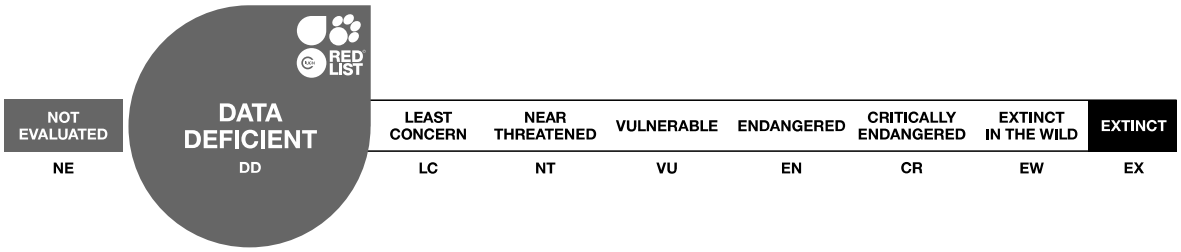
The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2020: T124915168A124930741
Scope(s): Global
Language: English

Exechia atlantis

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



View on www.iucnredlist.org

Citation: Nunes, R. & Borges, P.A.V. 2020. *Exechia atlantis*. *The IUCN Red List of Threatened Species* 2020: e.T124915168A124930741. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T124915168A124930741.en

Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Diptera	Mycetophilidae

Scientific Name: *Exechia atlantis* Stora, 1945

Assessment Information

Red List Category & Criteria: Data Deficient ver 3.1

Year Published: 2020

Date Assessed: March 28, 2018

Justification:

Exechia atlantis is an endemic species of the Azores (Portugal), that was described from S. Miguel island. This species was collected in a single area of exotic (production) forest, in a site that is currently degraded. From the historical data, this species would have a very small Extent of Occurrence (4 km^2) and Area of Occupancy (4 km^2); and 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 assessed, and further research is needed into its population, distribution, threats, ecology and life history. Conservation/restoration of native habitats and humid areas 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:

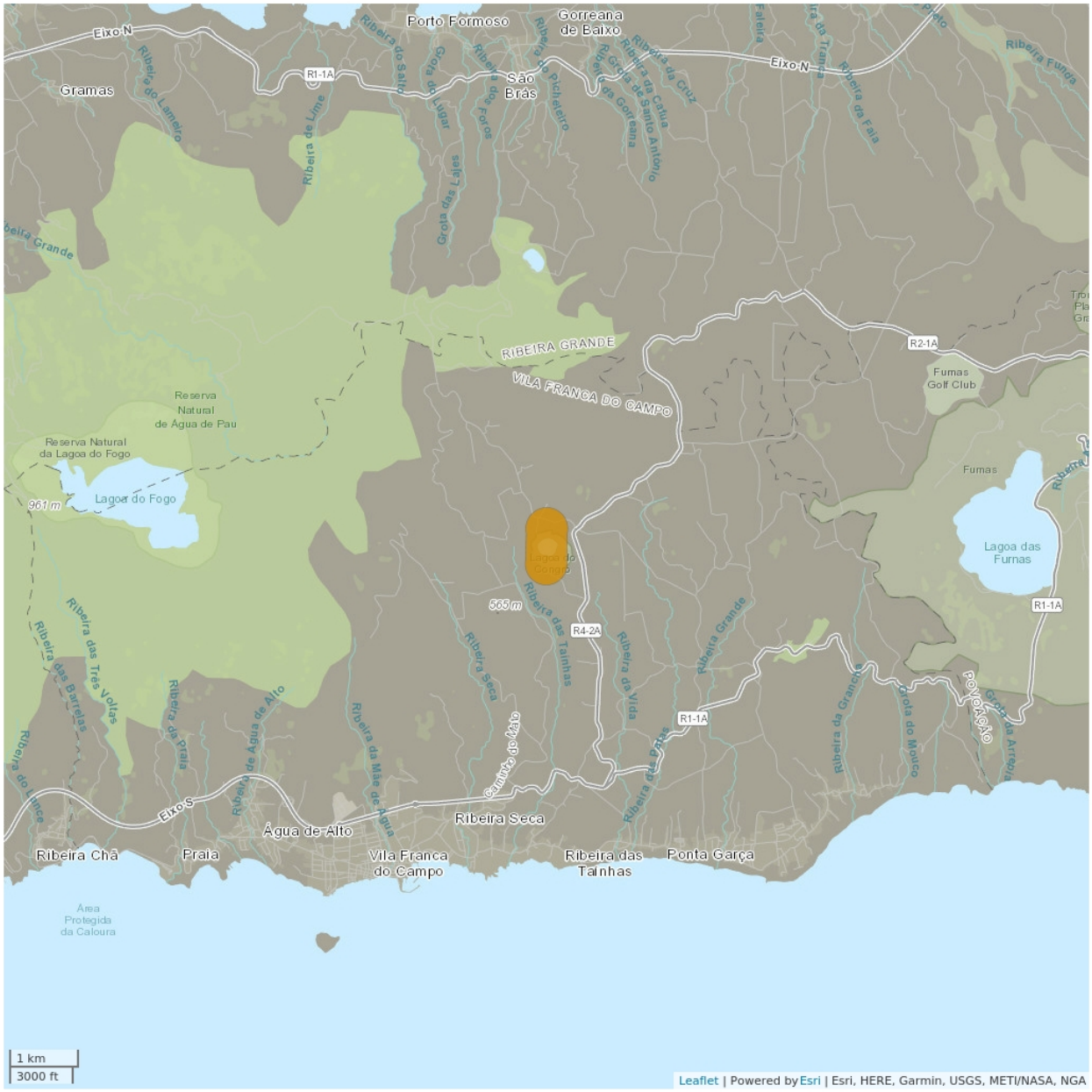
Exechia atlantis is an Azorean-endemic fly species that was described from the island S. Miguel (Azores, Portugal) (Borges *et al.* 2010), known from a single site, Lagoa do Congro, a disturbed location in production forest. Based on the old historical data (Frey 1945), the Extent of Occurrence (EOO) would be ca. 4 km^2 and Area of Occupancy (AOO) would also be ca. 4 km^2. However, there is no recent information regarding the distribution of this species.

Country Occurrence:

Native, Extant (resident): Portugal (Azores)

https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T124915168A124930741.en

Distribution Map

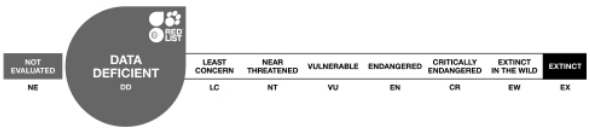


Legend

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.

https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T124915168A124930741.en

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. Mycetophilidae occur mainly in humid areas like moist forests (McAlpine *et al.* 1981), but also are quite common in swamps. Others live in the moister parts of heath and open grassland and some species have been recorded on mosses and liverworts. The larvae of many species live in fleshy or woody fungi or in dead wood and usually feed on fungi, especially the fruiting bodies, but also spores and hyphae. Nevertheless, the larvae of some species, while still being associated with fungi, are at least partly predatory (McAlpine *et al.* 1981). A few species are monophagous or polyphagous, but the majority of species are restricted to particular genera or families of fungi. Pupation usually takes place in the ground but some species pupate in the host fungus (McAlpine *et al.* 1981). When known, larvae of the genus *Exechia* develop in soft fungi, like agarics (Chandler and Ribeiro 1995). This species was collected in an area of production forest (*Cryptomeria japonica*).

Systems: Terrestrial

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 Mycetophilidae 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. Past human disturbance and land use changes might have also affected this species.

Conservation Actions (see Appendix for additional information)

The species is not protected by regional law. 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 habitat its preferences, conservation of native habitats and natural water bodies could potentially aid this species conservation. Historically, this species was present in one area that is currently disturbed, but included in the Natural Park of S. Miguel.

Credits

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

Reviewer(s): Russell, N.

https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T124915168A124930741.en

Bibliography

Borges, P.A.V., Costa, A., Cunha, R., Gabriel, R., Gonçalves, V., Martins, A.F., Melo, I., Parente, M., Raposeiro, P., Rodrigues, P., Santos, R.S., Silva, L., Vieira, P. and Vieira, V. 2010. *A list of the terrestrial and marine biota from the Azores*. Princípia, Cascais.

Chandler, P. and Ribeiro, E. 1995. The Sciaroidea (Diptera) (excluding Sciaridae) of the Atlantic islands (Canary Islands, Madeira and the Azores). *Boletim do Museu Municipal do Funchal* 3: 1-170.

Ferreira, M.T., Cardoso, P., Borges, P.A.V., Gabriel, R., Azevedo, E.B., Reis, F., Araújo, M.B. and Elias, R.B. 2016. Effects of climate change on the distribution of indigenous species in oceanic islands (Azores). *Climate Change* 138(3-4): 603-615.

Frey, R. 1945. Tiergeographische studen über die Dipterenfauna der Azores. *Commentatione biologicae* 8(10): 1-114.

IUCN. 2020. The IUCN Red List of Threatened Species. Version 2020-3. Available at: www.iucnredlist.org. (Accessed: 10 December 2020).

McAlpine, J.F., Peterson, B.V., Shewell, G.E., Teskey, H.J., Vockeroth, J.R. and Wood, D.M. 1981. *Manual of Nearctic Diptera - Volume 1*. Research Branch, Agriculture Canada, Ottawa.

Citation

Nunes, R. & Borges, P.A.V. 2020. *Exechia atlantis*. *The IUCN Red List of Threatened Species* 2020: e.T124915168A124930741. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T124915168A124930741.en

Disclaimer

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) -> 5.5. Wetlands (inland) - Permanent Freshwater Lakes (over 8ha)	Resident	Suitable	-
14. Artificial/Terrestrial -> 14.3. Artificial/Terrestrial - Plantations	Resident	Suitable	-

Threats

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

Threat	Timing	Scope	Severity	Impact Score
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
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

https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T124915168A124930741.en

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): 4
Continuing decline in area of occupancy (AOO): Unknown
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km^2): 4
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): 450
Upper elevation limit (m): 550
Population
Continuing decline of mature individuals: Unknown
Extreme fluctuations: Unknown
Population severely fragmented: Unknown

https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T124915168A124930741.en

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.