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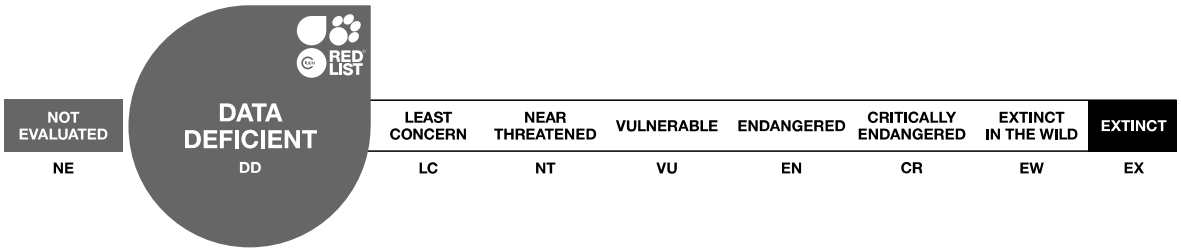
Bartalinia mellea

Assessment by: Sánchez, R.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Fungi	Ascomycota	Sordariomycetes	Amphisphaeriales	Bartaliniaceae

Scientific Name: *Bartalinia mellea* F. Anderson & Bianchin.

Taxonomic Source(s):

Index Fungorum Partnership. 2023. Index Fungorum. Available at: http://www.indexfungorum.org.

Assessment Information

Red List Category & Criteria: Data Deficient ver 3.1

Year Published: 2023

Date Assessed: June 13, 2023

Justification:

Bartalinia mellea is a fungal species found only once, on the north slope of Cerro Tres Picos (in the south of Buenos Aires province) in 1988. This site is characterized by fragmented patches of natural grassland. The fungus was found on a shrubby plant, *Mimosa rocae*, which grows in grassland ecosystems over rocky outcrops; and it is suspected that it could be exclusively found with this plant. Despite the host plant being mostly distributed in Uruguay, and also occurring in one state of Brazil, the fungus is believed to be potentially restricted to a dry climate with long periods of insolation and very low temperatures in winter. So, it is suspected that the distribution of the fungus is restrict to the southern mountains of Buenos Aires province of Argentina. These mountains are of low height (up to 1,250 m asl) and the grassland ecosystems are mainly threatened by human activities such as tourist hiking, anthropogenic fire, introduction of invasive species and land use changes, resulting in its decline. There are not many potential sites for the species in the mountain ranges of Buenos Aires province (Argentina); and considering the extinction risk of *M. rocae* (VU in a national red list) it is parsimonious to assess the fungal species as declining. On the other hand, without clear information on its rate of decline and population size it is not possible to accurately quantify the extinction risk of *B. mellea.* Therefore, it is assessed as Data Deficient.

Geographic Range

Range Description:

Bartalinia mellea is a fungal species found exclusively with *Mimosa rocae*, a plant occurring in the southern mountains of Buenos Aires province (Argentina), Bom Jesus city in (Rio Grande do Sul state) southern Brazil and Uruguay. This plant is found growing between 200 and 700 m asl. *B. mellea* potentially has a very restricted distribution, hving been found only once on the north slope of Cerro Tres Picos (south of Buenos Aires province) in 1988. This is the southern limit of *M. rocae*, where it is probably affected by the dry climate in general, long periods of insolation and very low temperatures in winter and the fungus species may be restricted to areas with such conditions in Buenos Aires province.

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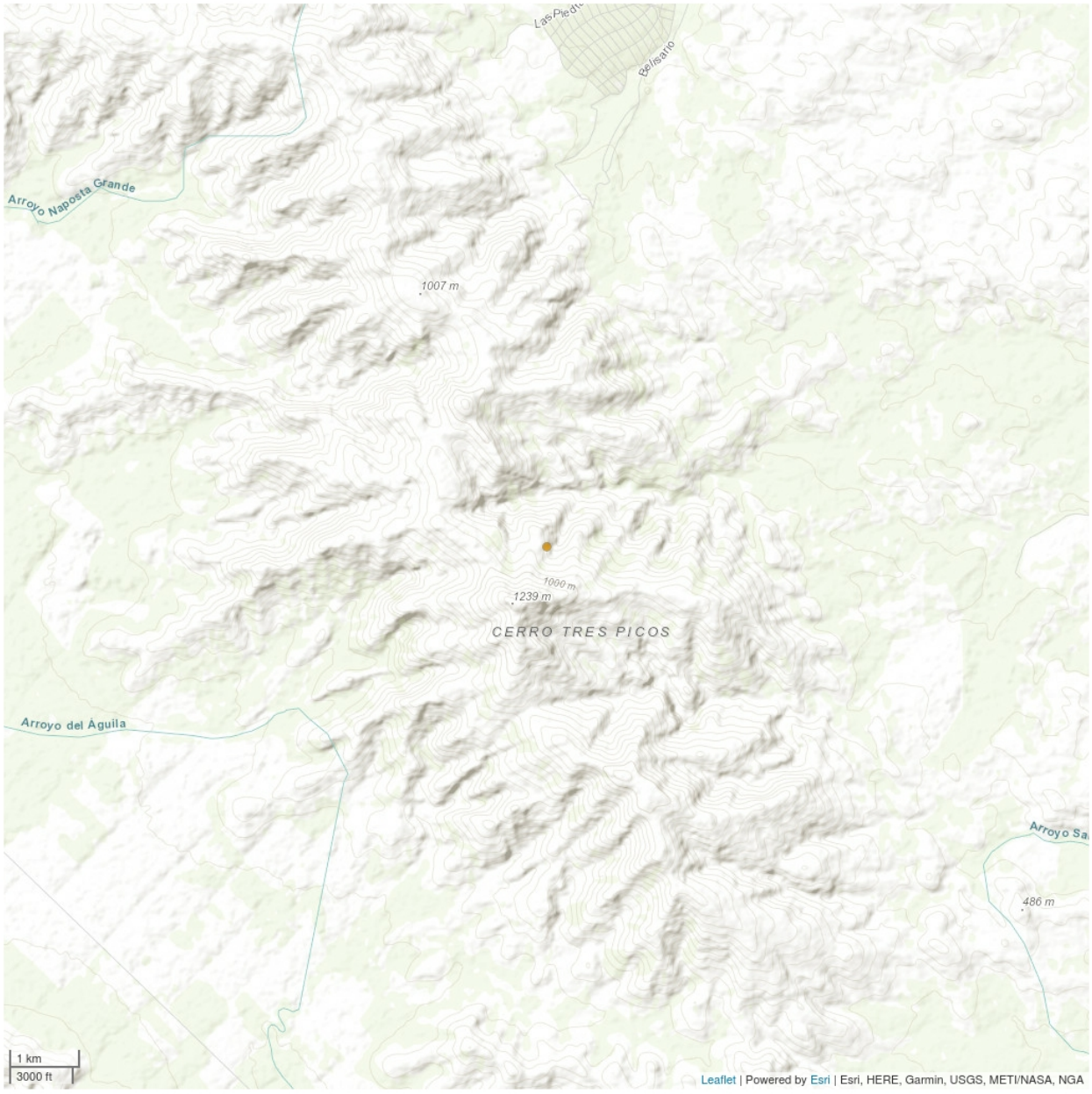
Country Occurrence:

Native, Extant (resident): Argentina

Distribution Map



Legend

EXTANT (RESIDENT)

Compiled by:

IUCN 2022

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 currently known from one site with only one collection from the southern limit of the host plant. It appears to be a very host-specific fungal species, only found associated with *Mimosa rocae* (Fabaceae). In these mountains the plant occurs in small patches of 100-200 m^2 and although it usually responds positively to livestock grazing, its reproductive strategies make it a plant that cannot expand its distribution area (Long 2018). On the other hand, *M. rocae* is considered Vulnerable in Buenos Aires province (Delucchi 2006, Alonso *et al*. 2009, Delucchi and Hernández 2015) and has priority conservation status within the National System of Protected Areas (SNAP) of Uruguay.

Although *Bartalinia mellea* is known from only one site (one of the mountains ranges in the south of Buenos Aires province) it is suspected that its potential distribution is restricted to the mountain ranges, considering the weather conditions of annual rains and temperatures. These mountains are of low height (up to 1,250 m asl) so the grassland ecosystems are mainly threatened by human activities such as tourist hiking, anthropogenic fire, introduction of invasive species and land use changes, resulting in their decline. Also, considering its host's extinction risk (Vulnerable in the national red list) it is parsimonious to assess the species as decreasing. On the other hand, there is no clear information on its rate of decline, and it is not currently possible to accurately estimate the fungus' population size.

Current Population Trend: Decreasing

Habitat and Ecology **(see Appendix for additional information)**

Bartalinia mellea was isolated from chlorotic leaves of *Mimosa rocae*, and further artificial inoculation on healthy leaves has proven that the species can infect and reproduce under suitable conditions. Thus, the species was considered as a pathogen of *M. rocae*, an opinion also considered by Anderson and Bianchinotti (1996). Additionally, the species is considered specific to *M. rocae* as different plant taxa were screened for fungal pathogens in the region, and *B. mellea* was only isolated from *M. rocae*.

M. rocae is a shrub species that grows in grassland ecosystems over rocky outcrops. The plant also occurs in Uruguay and one state of Brazil, but it is expected that the potential area of occurrence of the fungus is restricted to the southern mountains of Buenos Aires province in Argentina. The fungus is expected to occur along its host's distribution only in the two mountain ranges of Buenos Aires due to the similar conditions of temperatures and annual rainfall found in these areas.

Systems: Terrestrial

Use and Trade **(see Appendix for additional information)**

No use/trade is known.

Threats **(see Appendix for additional information)**

Bertalinia mellea is restricted to grassland ecosystems over rocky outcrops in the southern mountains of Buenos Aires province. These mountains are of low height (up to 1,250 m asl) so the grassland ecosystems are fragmented patches mainly in high areas, and surrounded by urban settlements at lower elevations. The habitat is threatened by human activities such, tourist hiking, anthropogenic fire, introduction of invasive species, land use changes and climate change (Long and Grassini 1997, Zalba

and Villamil 2002).

Conservation Actions (see Appendix for additional information)

The main action required to prevent the decline of the species is the protection of its habitat (including *Mimosa rocae*) by the establishment of public conservation policies for the natural grassland ecosystems in the south of Buenos Aires province. Furthermore work to expand knowledge about the distribution of the species is needed, particularly focussing on whether it is present in the mountain system of Tandilia in Buenos Aires and to confirm that it is not present in Uruguay and Brazil. Also, it is important to better understand the threats it may face and to what extent they may be affecting the population size.

Credits

Assessor(s): Sánchez, R.

Reviewer(s): Drechsler-Santos, E., Martins da Cunha, K. & Minter, D.

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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?
4. Grassland -> 4.4. Grassland - Temperate	-	Suitable	-

Plant and Fungal growth forms
(http://www.iucnredlist.org/technical-documents/classification-schemes)

Plant and Fungal growth forms
M. Fungus

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

Threat	Timing	Scope	Severity
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	-	-
Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
1. Residential & commercial development -> 1.3. Tourism & recreation areas	Ongoing	-	-
Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
6. Human intrusions & disturbance -> 6.1. Recreational activities	Ongoing	-	-
Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
7. Natural system modifications -> 7.1. Fire & fire suppression -> 7.1.1. Increase in fire frequency/intensity	Ongoing	-	-
Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.1. Unspecified species	Ongoing	-	-
Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	-	-
Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		

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Conservation Actions Needed

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

Conservation Action Needed	Notes
1. Land/water protection -> 1.1. Site/area protection	-
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level	-

Research Needed

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

Research Needed	Notes
1. Research -> 1.2. Population size, distribution & trends	-
1. Research -> 1.3. Life history & ecology	-
1. Research -> 1.5. Threats	-

Additional Data Fields

Distribution
Lower elevation limit (m): 200
Upper elevation limit (m): 700

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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.

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