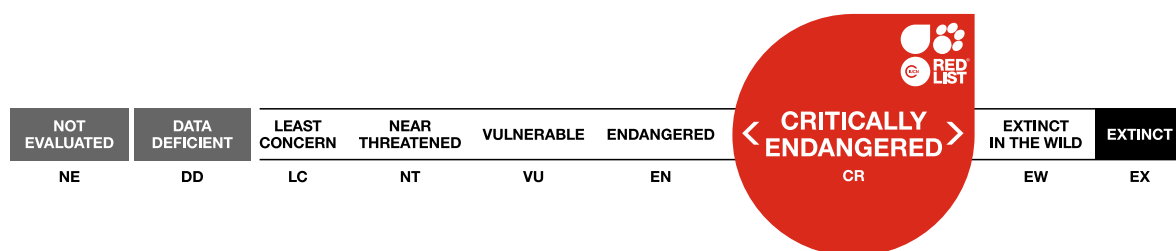


Parmotrema pachydermum

Assessment by: Spielmann, A., Costa-Rezende, D.H., Kossmann, T., Drechsler-Santos, E.R. & Gumboski, E.L.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Fungi	Ascomycota	Lecanoromycetes	Lecanorales	Parmeliaceae

Scientific Name: *Parmotrema pachydermum* (Hue) O. Blanco, A. Crespo, Divakar, Elix & Lumbsch

Synonym(s):

- *Concamerella pachyderma* (Hue) W.L. Culb. & C.F. Culb.
- *Everniastrum pachydermum* (Hue) Hale
- *Parmelia pachyderma* Hue

Taxonomic Source(s):

Index Fungorum Partnership. 2021. Index Fungorum. Available at: <http://www.indexfungorum.org>.

Taxonomic Notes:

Hue (1899) described *Parmelia pachyderma* from Montevideo, Uruguay. Hale (1976) combined it in the genus *Everniastrum*, and Culberson and Culberson (1981) described it in the new endemic genus *Concamerella*. In 2005, based on genetic evidence from *Concamerella fistulata* (Tayl.) W Culb. & C. Culb., the *Parmotrema pachydermum* species was finally placed in the genus *Parmotrema* (Blanco *et al.* 2005).

Assessment Information

Red List Category & Criteria: Critically Endangered C2a(i) [ver 3.1](#)

Year Published: 2022

Date Assessed: April 17, 2022

Justification:

This species is endemic to Rio Grande do Sul State (southern Brazil) and Uruguay, and is suffering habitat loss for extensive soy plantations, associated with fires. Recent reports of it are rare and the biggest subpopulation known from field observations (at Piratini Municipality, Rio Grande do Sul State) during the years 2011-2019 is becoming heavily threatened from the surrounding soy plantations and use of fire, being restricted to only some rocks that are not at the border with the soy plantations. Due to the small population size (up to 157 mature individuals) with up to 50 mature individuals in the biggest subpopulation (considering the lower end of the population size estimate), the species is precautionarily assessed as Critically Endangered under criterion C2a(i).

Geographic Range

Range Description:

Parmotrema pachydermum is endemic to southern Brazil (Rio Grande do Sul) and Uruguay. The type collection of *P. pachydermum* is from Montevideo, Uruguay. Additional localities from Uruguay include Durazno, Lavalleja, Maldonado and Rocha (Culberson and Culberson 1981). In Brazil it is known from Rio Grande do Sul only, but reported in field observations from Bagé, Caçapava do Sul, Guaíba, Porto Alegre

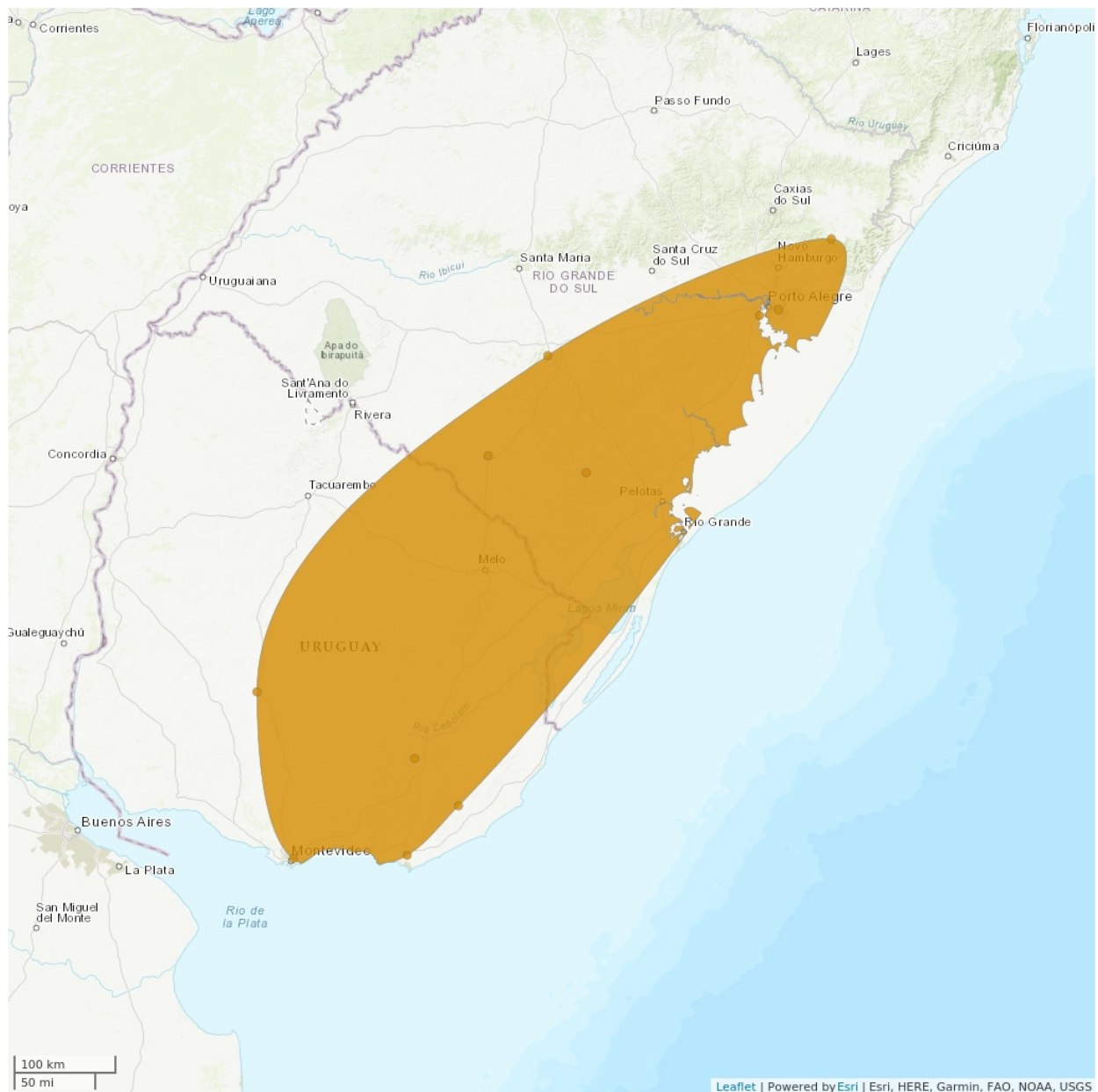
and São Francisco de Paula (see the references in Spielmann (2006), as *Concamerella pachyderma*), and Piratini (field observations). No collections are known from the adjacent Santa Catarina (Brazil), Paraguay or Argentina.

Apparently the species is typical for the Pampa Biome, although some rare individuals were found elsewhere in the Rio Grande do Sul Highlands (Campos de Cima da Serra), where the environment is quite similar to the Pampa Biome.

Country Occurrence:

Native, Extant (resident): Brazil; Uruguay

Distribution Map

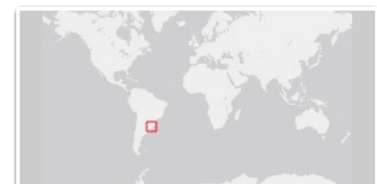
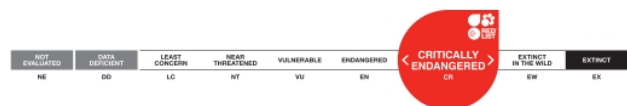


Legend

EXTANT (RESIDENT)

Compiled by:

IUCN 2021



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

Population

Based on the scarcity of known records, the number of locations (8-15) and amount of suitable environment (potentially restricted to small patches within large plantation areas), the population size is estimated to be no more than 157 mature individuals, unevenly distributed across subpopulations. The species is declining as its area of occurrence is historically threatened by large plantations and farming, as well as the associated use of fire in these activities. The decline is ongoing.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

Parmotrema pachydermum is typical of the Pampa biome. It is exclusively saxicolous and grows at sunny places, usually at rocky outcrops or mountains.

Systems: Terrestrial

Use and Trade (see Appendix for additional information)

No use and trade known for this species.

Threats (see Appendix for additional information)

The Pampa Biome is suffering a lot of threat in recent years, especially by the extensive soil use for soy plantation and parallel fires, which can reach the rocks where *Parmotrema pachydermum* grows. The habitat decline is estimated at 44% due to deforestation.

Conservation Actions (see Appendix for additional information)

One of the most representative subpopulations of *Parmotrema pachydermum* stands in Cerro do Ubaldo, Municipality of Piratini, Rio Grande do Sul. Piratini is one of the places where Malme collected many lichens during the First Regnellian Expedition (1892-1894). This place should be elected as a specially protected area.

Determining the real range of distribution of *Parmotrema pachydermum* requires more field work. No genetic data are known either, although recent collections are under study.

Credits

Assessor(s): Spielmann, A., Costa-Rezende, D.H., Kossmann, T., Drechsler-Santos, E.R. & Gumboski, E.L.

Reviewer(s): Allen, J.

Facilitator(s) and Compiler(s): Leimbach-Maus, H.

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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 -> 4.6. Grassland - Subtropical/Tropical Seasonally Wet/Flooded	Resident	Suitable	-

Plant Growth Forms

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

Plant Growth Form
LC. Lichen
M. Fungus

Threats

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

Threat	Timing	Scope	Severity	Impact Score
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.3. Agro-industry farming	Ongoing	Majority (50-90%)	Rapid declines	Medium impact: 7
7. Natural system modifications -> 7.1. Fire & fire suppression -> 7.1.1. Increase in fire frequency/intensity	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5

Conservation Actions in Place

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

Conservation Action in Place
In-place species management
Harvest management plan: No
Successfully reintroduced or introduced benignly: No
Subject to ex-situ conservation: No

Conservation Actions Needed

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

Conservation Action Needed
1. Land/water protection -> 1.1. Site/area protection

Research Needed

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

Research Needed
1. Research -> 1.1. Taxonomy
1. Research -> 1.2. Population size, distribution & trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 28
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): No
Estimated extent of occurrence (EOO) (km ²): 104671
Continuing decline in extent of occurrence (EOO): Yes
Extreme fluctuations in extent of occurrence (EOO): No
Number of Locations: 8-15
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: No
Population
Number of mature individuals: 57-157
Continuing decline of mature individuals: Yes
Extreme fluctuations: No
Extreme fluctuations in subpopulations: No
All individuals in one subpopulation: No
No. of individuals in largest subpopulation: 50-100
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 30

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