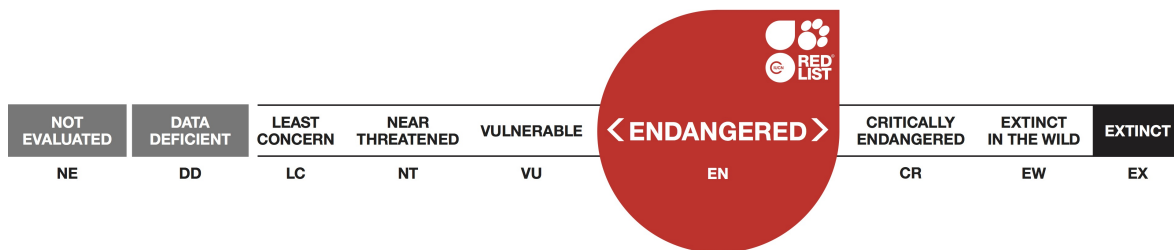


Ramalina timdaliana

Assessment by: Perez-Ortega, S



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Fungi	Ascomycota	Lecanoromycetes	Lecanorales	Ramalinaceae

Taxon Name: *Ramalina timdaliana* Krog

Taxonomic Notes:

This is shrubby species growing saxicolous on volcanic rocks. It stands up to 5 cm high, and it adheres to the substrate surface through a holdfast 2-4 mm diam. It is richly branched. Branches are solid, subterete to somewhat complanate, 0.8-1.2(-2) mm wide, often with shortly linear pseudocyphellae, especially near the base, apices with several branching points close together. Soredia absent. Cortex c. 25 µm thick, chondroid tissue forming a discontinuous cylinder with a few chondroid strands interconnected across the medulla. Apothecia numerous, lateral, up to 3 mm diam.; spores (few seen) bilocular,

13-14x6 µm. Chemistry: Divaricatic acid, triterpenoids, usnic acid. The species belongs to the *Ramalina decipiens* group (Krog & Osthagen 1980), a group of Macaronesian endemic species.

The species is very morphologically very similar to the also endemic *R. jamesii*. Main differences are anatomical and chemical. Chondroid tissue is discontinuous in *R. timdaliana* and continuous in *R. jamesii* filling most of the branches. Further, different terpenoid patterns are found in both species and salazinic acid is only found in *R. jamesii*.

Identification Information:

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Assessment Information

Red List Category & Criteria: Endangered D [ver 3.1](#)

Year Published: 2017

Date Assessed: June 18, 2015

Justification:

There only exists a single small population on one volcano mountain in the world. It is threatened by accidental extinction by trampling, grazing and possibly collecting.

Criterion A: There is no current information about the trends of population size over long time periods, so it is not possible to apply this criterion.

Criterion B: Both B1 and B2 subcriteria could be applied as the extent of occurrence is smaller than 100 km² and the area of occupancy is likely smaller than 10 km². However, the species does not fit the two necessary conditions for this criterium. It only satisfy subcriterion B1a (or B2a) as it occurs in a single population worldwide. However, no available information support the application of subcriteria a or b.

Criterion C. No information is available about the total number of individuals of this species.

Criterion D. The total number of individuals is unknown, considering 1m²= 1 ind, it is likely the number of individuals is less than 250. Actually 250 m² is occupied by the species, which is known from a single mountain top.

Geographic Range

Range Description:

The species is known from a single peak -old volcano- Pico do Castello on the small Island of Porto Santo in the Madeira Archipelago (Portugal). This peak also hosts other endemic *Ramalina* species also assessed as *R. erosa*, *R. confertula*, *R. jamesii* and the recently IUCN red listed species *Anzia centrifuga*.

Country Occurrence:

Native: Portugal (Madeira)

Population

The species is restricted to one locality on a volcano. Population size was not assessed. Population size is, considering 1 individual = 1 m², likely to be less than 250 individuals.

Current Population Trend: Unknown

Habitat and Ecology (see Appendix for additional information)

Saxicolous, on volcanic acidic rocks. During a visit to Pico do Castelo in May 2015, specimens that seem to belong to this species were also found on dry branches of living and dead *Pinus halepensis* (Sparrius et al. 2017)

Systems: Terrestrial

Threats (see Appendix for additional information)

The most important threats are related to its small population size, and its single island endemic character. Due to the small population size there is a high risk of extinction due to single catastrophic event such as a fire.

It is very likely that the species may be grazed by goats during dry periods as it occurs with other *Ramalina* species in the Macaronesia.

There is also a high risk of population reduction due to collection by lichenologists.

Finally, trampling by touristic activities may represent a risk for this species.

Conservation Actions (see Appendix for additional information)

The most important action to be taken is the whole protection of the area where this and other threatened species occur.

Urgent need to establish the actual population size as well as population dynamics. Research on the biology of the species (reproduction, generation time,...) is also needed. Phylogenetic studies to infer its phylogenetic affinities are being carried out.

Credits

Assessor(s): Perez-Ortega, S

Reviewer(s): Scheidegger, C.

Contributor(s): Weerakoon, G., Spribille, T. & Aptroot, A.

Bibliography

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Sparrius, L.B. et al. 2017. Estimating the population size of the endemic lichens *Anzia centrifuga* (Parmeliaceae) and *Ramalina* species (Ramalinaceae) on Porto Santo (Madeira archipelago). *The Bryologist* 119 (in press).

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External Resources

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?
0. Root -> 6. Rocky areas (eg. inland cliffs, mountain peaks)	Resident	Suitable	Yes

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 -> 2.1.2. Small-holder farming	Ongoing	Whole (>90%)	Causing/could cause fluctuations	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.2. Species disturbance		
5. Biological resource use -> 5.2. Gathering terrestrial plants -> 5.2.1. Intentional use (species is the target)	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
6. Human intrusions & disturbance -> 6.1. Recreational activities	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		

Conservation Actions in Place

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

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: No

Conservation Actions Needed

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

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection
2. Land/water management -> 2.1. Site/area management
3. Species management -> 3.4. Ex-situ conservation -> 3.4.2. Genome resource bank
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.2. Policies and regulations

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 -> 2.2. 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): 10
Estimated extent of occurrence (EOO) (km ²): 100
Number of Locations: 1
Population
Number of mature individuals: 249
No. of subpopulations: 1
All individuals in one subpopulation: Yes

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