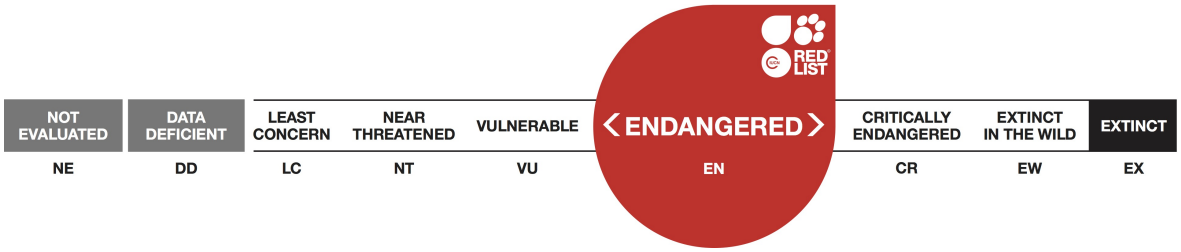
The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T71542492A71542495
Scope: Global
Language: English

Cetreliopsis papuae

Assessment by: Randlane, T. & Aptroot, A.



View on www.iucnredlist.org

Citation: Randlane, T. & Aptroot, A. 2018. *Cetreliopsis papuae*. The IUCN Red List of Threatened Species 2018: e.T71542492A71542495. http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T71542492A71542495.en

Taxonomy

Kingdom	Phylum	Class	Order	Family
Fungi	Ascomycota	Lecanoromycetes	Lecanorales	Parmeliaceae

Taxon Name: *Cetreliopsis papuae* Randlane & Saag

Identification Information:

This attractive species was described two decades ago (Randlane et al. 1995) and it is supposed to belong to the core group of cetrarioid lichens in fam. Parmeliaceae (Thell et al. 2009; Randlane et al. 2013, Divakar et al.2017). Currently this species currently treated as *Nephromopsis papuae* (Divakar et al.2017).

Although its morphology (separated dorsiventral lobes growing upright; no pycnidial projections or apothecia observed) and ecology (inhabits ground while all other *Cetreliopsis* species are corticolous) differ from those of the other representatives of the genus, there is no doubt about its generic position due to specific chemistry and anatomical structures (large pseudocyphellae on both thallus surfaces).

Cetreliopsis papuae is a macrolichen with distinct morphological characters, so it can be recognized in the field also by non-specialists. However, a new combination, *Nephromopsis papuae* (Randlane & Saag) Divakar, Crespo & Lumbsch, applying a wide genus concept, has been proposed in 2017.

Assessment Information

Red List Category & Criteria: Endangered B2ab(iii,iv) ver 3.1

Year Published: 2018

Date Assessed: August 25, 2017

Justification:

Criterion A is not applicable as there is no information about the trends of population size over long time periods.

Criterion B: using GeoCat tool, EOO was assessed 8,821 km². The species has been recorded only in 3 mountain tips in Papua New Guinea and is definitely absent from some relatively often visited mountains in between these three localities. It might extend also to the mountains in Papua province, Indonesia (earlier Irian Jaya). Even so, the whole mountain range would be less than 20,000 sq km. Lichen population in mountain tips is clearly fragmented within this range, and the population reduction is inferred because of possible fires and mining activities in the species habitat. *Cetreliopsis papuae* is assessed EN.

Criterion C is not applicable as there is no information about the number of mature individuals.

Criterion D: AOO was assessed 12 sq km; no of known localities is 3

Geographic Range

Range Description:

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T71542492A71542495.en

The species occurs only in one island and in one country – Papua New Guinea.

Location records:
1. Papua New Guinea, [Western province,] Star Mountains, Mt. Scorpion, 3600 m, open herbfield, leg. Hope 1975 (US, holotype).
2. Papua New Guinea, Central distr., Tapini subdistr., Mt. Strong, 3450 m, shrublet communities, leg. Coode 03.05.1971 (Herb. Aptroot).
3. Papua New Guinea, Southern Highlands, Mt. Giluwe, 4140 m, leg. D. McVean 1967 (BM).

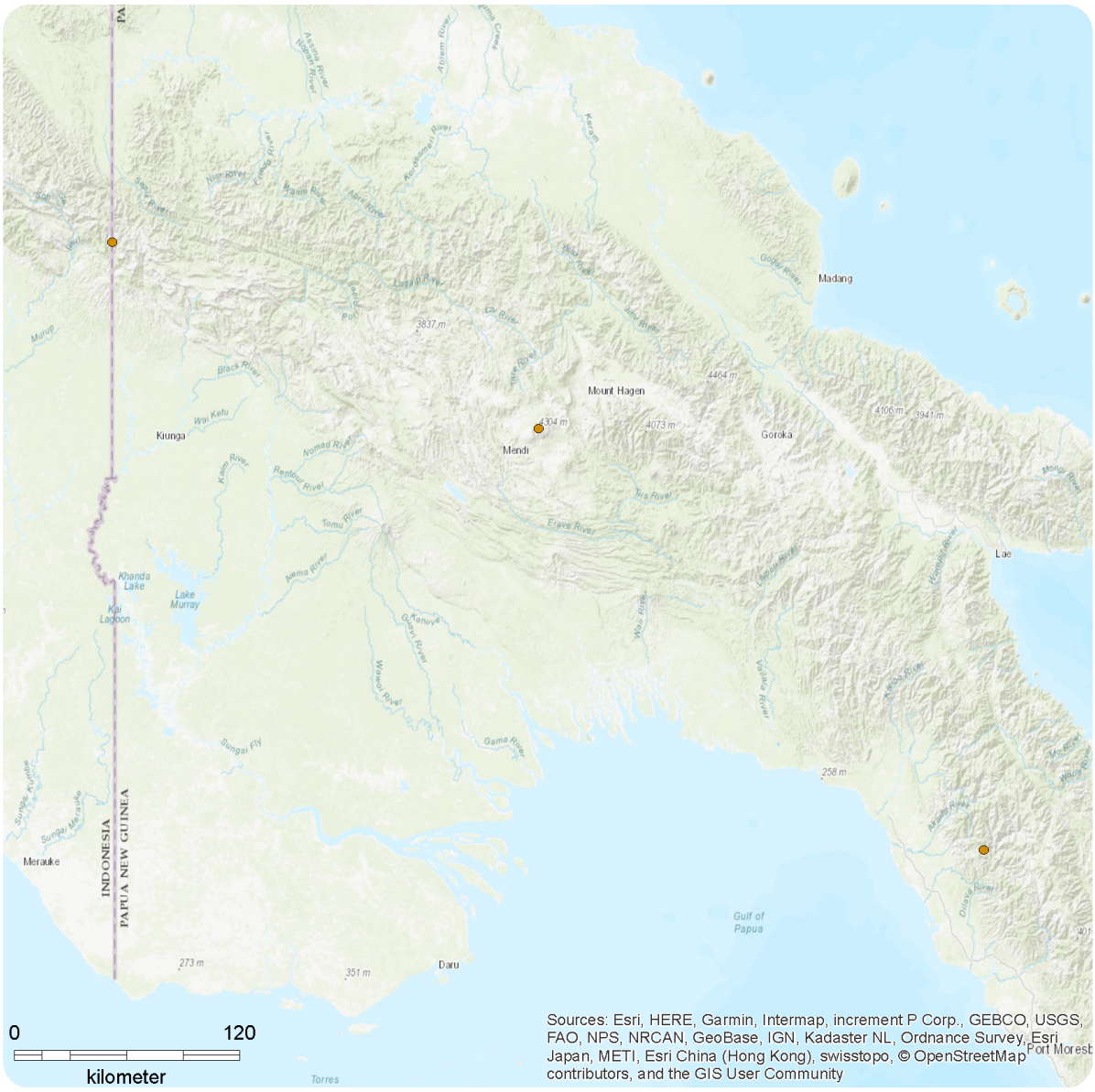
Country Occurrence:

Native: Papua New Guinea (Papua New Guinea (main island group))

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T71542492A71542495.en

Distribution Map

Cetreliopsis papuae

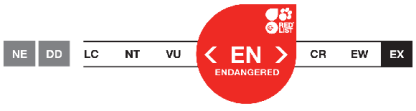


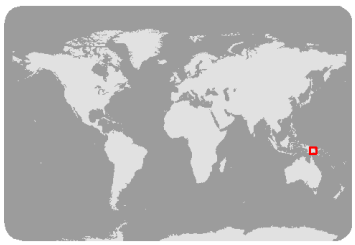
Range

- Extant (resident)

Compiled by:

IUCN





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

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T71542492A71542495.en

Population

Cetreliopsis papuae is an extremely rare species with very restricted distribution area in New Guinea. Only three localities are known till now (collections made in 1967, 1971 and 1975), all from high altitudes (over 3400 m) in montane areas of Papua New Guinea.

Current Population Trend: Unknown

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

Cetreliopsis papuae grows in high mountains (over 3400 m) of Papua New Guinea, in open herbfields or shrublet communities, on the ground.

Systems: Terrestrial

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

Cetreliopsis papuae has very restricted distribution area and specific habitat; it is endangered by possible damage of this habitat, alpine grasslands, by fires and economic activities. Regular burning takes place in many localities of these mountain ranges, both in grasslands and in forests (Lambley 1991). For instance, in 2008 it was declared, based on satellite images, that Papua New Guinea has lost 24% of its rainforest during last 30 years through commercial logging, agriculture and burning (Satellite images uncover… 2008). Additionally, deposits of gold and copper in the Star Mountains (enclosing one recorded locality of *Cetreliopsis papuae*), are increasingly exploited with large mining operations which have implications for the surrounding areas (Lambley 1991).

The species is sterile and probably reproduces vegetatively by thallus fragments, therefore the dispersal distance cannot be large, and ability of colonising additional localities is likely to be limited.

Conservation Actions **(see Appendix for additional information)**

No conservation plan is available; the known localities are not situated in protected areas, according to the present knowledge. There is an urgent need for a detailed assessment of the current extent of occurrence, population size and trend.The first concern is whether *Cetreliopsis papuae* is still growing in the area where it has been recorded in 1960-70s; any further data about its ecology, biology and population trends are required as well.

Credits

Assessor(s): Randlane, T. & Aptroot, A.

Reviewer(s): Scheidegger, C.

Contributor(s): Weerakoon, G.

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T71542492A71542495.en

Bibliography

ABC News. 2008. Satellite images uncover rapid PNG deforestation.

Divakar, P. et al. 2017. Using a temporal phylogenetic method to harmonize family- and genus-level classification in the largest clade of lichen-forming fungi. *Fungal Diversity*.

IUCN. 2018. The IUCN Red List of Threatened Species. Version 2018-2. Available at: www.iucnredlist.org. (Accessed: 15 November 2018).

Lambley, P. W. 1991. Lichens of Papua New Guinea. In: Galloway, D. J (ed.), *Tropical Lichens: Their systematics, Conservation, and Ecology*, pp. 69–84. Claredon Press, Oxford.

Randlane, T., Saag, A., Thell, A. & Ahti, T. 2013. Third world list of cetrarioid lichens – in a new databased form, with amended phylogenetic and type information. *Cryptogamie, Mycologie* 34(1): 79–94.

Randlane, T. Thell, A. & Saag, A. 1995. New data about the genera Cetrariopsis, Cetreliopsis and Nephromopsis (fam. Parmeliaceae, lichenized Ascomycota). *Cryptogamie, Bryol. Lichenol* vol. 16(no. 1): 35–60.

Sipman, H. J. M. & Aptroot, A. 2007. Lichen biodiversity in Papua New Guinea. In: Marshall, A. J. & B. M. Beehler (ed.), *The ecology of Papua*, pp. 303–319. Periplus, Singapore.

Thell, A., Högnabba, F., Elix, J. A., Feuerer, T., Kärnefelt, I., Myllys, L., Randlane, T., Saag, A., Stenroos, S., Ahti, T. & Seaward, M. R. D. 2009. Phylogeny of the cetrarioid core (Parmeliaceae) based on five genetic markers. *Lichenologist* 41: 489– 511.

Citation

Randlane, T. & Aptroot, A. 2018. *Cetreliopsis papuae*. The IUCN Red List of Threatened Species 2018: e.T71542492A71542495. http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T71542492A71542495.en

Disclaimer

To make use of this information, please check the Terms of Use.

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?
3. Shrubland -> 3.6. Shrubland - Subtropical/Tropical Moist	Resident	Suitable	Yes
4. Grassland -> 4.7. Grassland - Subtropical/Tropical High Altitude	Resident	Suitable	Yes

Threats

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

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.2. Commercial & industrial areas	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
6. Human intrusions & disturbance -> 6.3. Work & other activities	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
7. Natural system modifications -> 7.1. Fire & fire suppression -> 7.1.1. Increase in fire frequency/intensity	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
7. Natural system modifications -> 7.3. Other ecosystem modifications	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition		

Conservation Actions in Place

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

Conservation Actions in Place
In-Place Research, Monitoring and Planning

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T71542492A71542495.en

Conservation Actions in Place
Action Recovery plan: No
In-Place Land/Water Protection and Management
Conservation sites identified: No

Conservation Actions Needed

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

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level

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
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km^2): 12
Estimated extent of occurrence (EOO) (km^2): 8821
Number of Locations: 3
Lower elevation limit (m): 3450
Upper elevation limit (m): 4140
Population
Population severely fragmented: Yes
No. of subpopulations: 3
Continuing decline in subpopulations: Yes

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T71542492A71542495.en

Population
Extreme fluctuations in subpopulations: No
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.