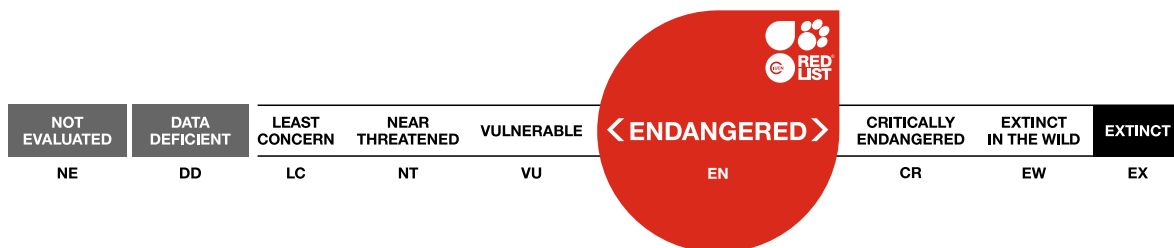


Trapeliopsis bisorediata

Assessment by: Reese Næsborg, R., Root, H. & Stone, D.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Fungi	Ascomycota	Lecanoromycetes	Not assigned	Trapeliaceae

Scientific Name: *Trapeliopsis bisorediata* McCune & F.J. Camacho

Taxonomic Source(s):

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

Taxonomic Notes:

Trapeliopsis bisorediata was described as a new species in 2002 (McCune *et al.* 2002).

Assessment Information

Red List Category & Criteria: Endangered B2ab(i,ii,iii,iv) [ver 3.1](#)

Year Published: 2022

Date Assessed: January 12, 2022

Justification:

Trapeliopsis bisorediata is a severely fragmented soil crust species. It is known from 6-9 scattered subpopulations from Washington, Oregon, Idaho, and California. A subpopulation in Washington appears to be stable while subpopulations in Idaho are declining due to overgrazing and wildfires. Soil crusts are usually delicate and do not respond well to disturbances. The species warrants a rank of Endangered, B2ab(i,ii,iii,iv) based on an area of occupancy of 152 km², severe fragmentation, and inferred declines due to overgrazing, wildfires, and urban and commercial development.

Geographic Range

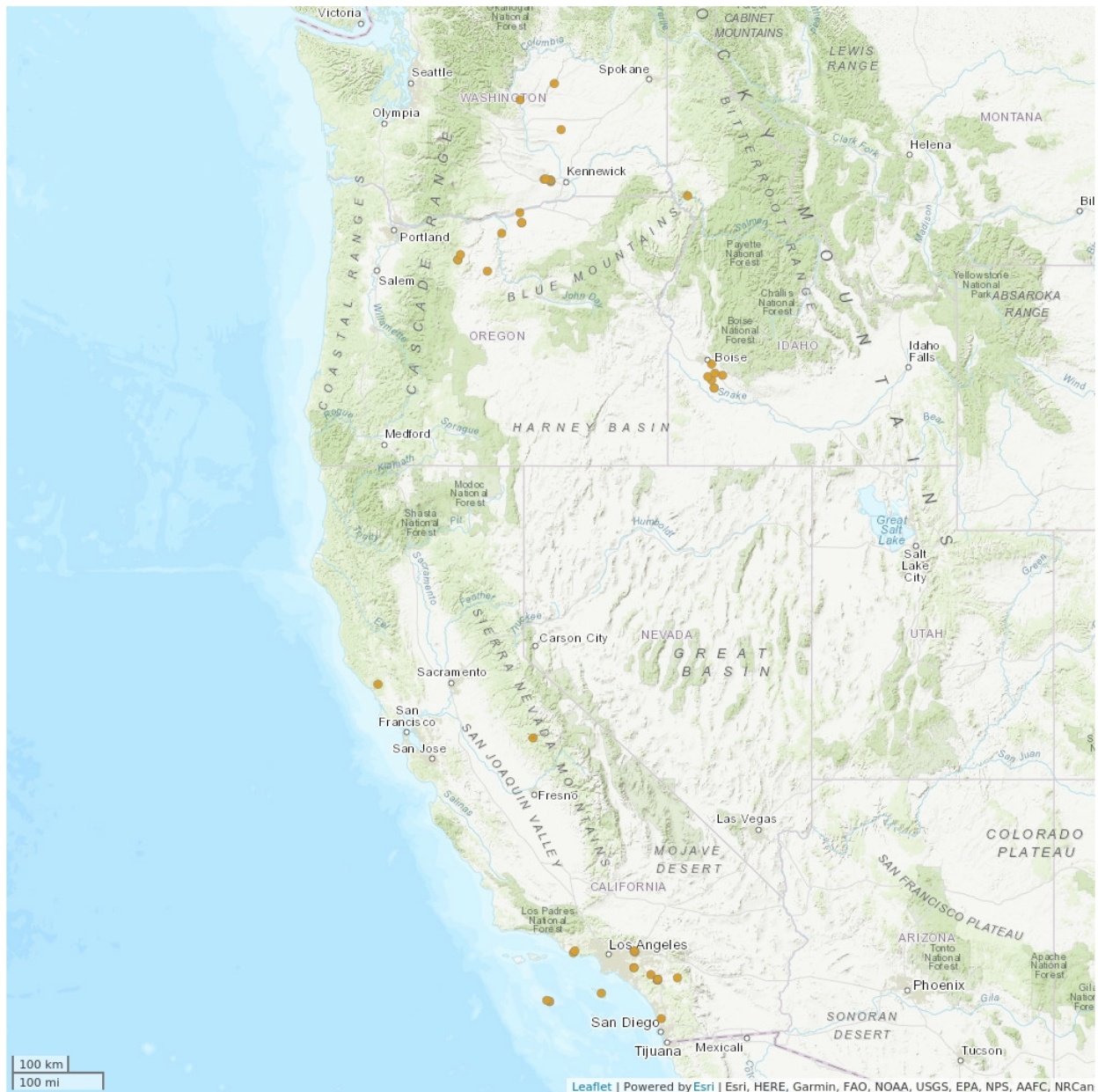
Range Description:

Trapeliopsis bisorediata is known from Washington, Oregon, Idaho, and California.

Country Occurrence:

Native, Extant (resident): United States

Distribution Map

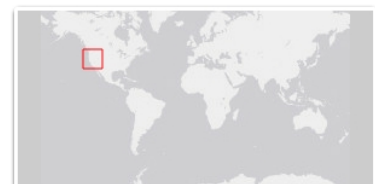


Legend

■ 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.

Population

Trapeliopsis bisorediata appears to be decreasing in some areas (e.g. southern Idaho, R. Rosentreter pers. comm.) and stable in others (e.g. the largest subpopulation in Washington state). The status is uncertain in most areas where the species occur.

Current Population Trend: Unknown

Habitat and Ecology (see Appendix for additional information)

Trapeliopsis bisorediata is an old-growth soil crust that occurs on steppe, shrubland, and grassland.

Systems: Terrestrial

Threats (see Appendix for additional information)

Overgrazing leads to dominance of exotic invasive grasses such as cheatgrass (*Bromus tectorum*). Cheatgrass is an annual that dries out during the summer months when the risk of fire is greatest; it ignites easily and causes fire to spread rapidly. This homogenization of fuel distribution has resulted in an increase in frequency and extent of fire (Condon *et al.* 2020). Some localities, especially in southern California, are likely threatened by urban development and commercial development. Installation of large solar farms in the natural habitat of *Trapeliopsis bisorediata* may result in destruction by grading of the soil, soil compaction. Furthermore, solar panels may alter soil humidity and temperature (Armstrong *et al.* 2016).

Conservation Actions (see Appendix for additional information)

Areas where the species occurs need protection, mainly by removing and controlling invasive annual grasses, eliminating or minimizing grazing, and restricting development into these areas. More research into the extent of the species distribution is needed and whether these subpopulations are stable or not.

Credits

Assessor(s): Reese Næsborg, R., Root, H. & Stone, D.

Reviewer(s): Allen, J.

Bibliography

Armstrong, A., Ostle, N.J. and Whitaker, J. 2016. Solar park microclimate and vegetation management effects on grassland carbon cycling. *Environmental Research Letters* 11: 074016.

Condon, L.A., Pietrasiak, N., Rosentreter, R. and Pyke, D.A. 2020. Passive restoration of vegetation and biological soil crusts following 80 years of exclusion from grazing across the Great Basin. *Restoration Ecology* 28: S75-S85.

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McCune, B., Camacho, F., and Ponzetti, J. 2002. Three new species of *Trapeliopsis* on soil in western North America. *The Bryologist* 105: 78-85.

Citation

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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?
3. Shrubland -> 3.4. Shrubland - Temperate	-	Suitable	-
3. Shrubland -> 3.8. Shrubland - Mediterranean-type Shrubby Vegetation	-	Suitable	-
4. Grassland -> 4.4. Grassland - Temperate	-	Suitable	-

Plant Growth Forms

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

Plant Growth Form
LC. Lichen

Threats

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

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	-	-	Low impact: 3
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
1. Residential & commercial development -> 1.2. Commercial & industrial areas	Ongoing	-	-	Low impact: 3
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	-	-	Low impact: 3
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.3. Agro-industry grazing, ranching or farming	Ongoing	-	-	Low impact: 3
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
3. Energy production & mining -> 3.3. Renewable energy	Ongoing	-	-	Low impact: 3
	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	-	-	Low impact: 3
	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	-	-	Low impact: 3
	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 -> 8.1.2. Named species (Bromus tectorum)	Ongoing	-	-	Low impact: 3

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
Conservation sites identified: Yes, over entire range
Occurs in at least one protected area: Yes

Conservation Actions Needed

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

Conservation Action Needed
1. Land/water protection -> 1.1. Site/area protection
2. Land/water management -> 2.2. Invasive/problematic species control
2. Land/water management -> 2.3. Habitat & natural process restoration

Research Needed

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

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

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 152
Continuing decline in area of occupancy (AOO): Yes
Estimated extent of occurrence (EOO) (km ²): 683284
Continuing decline in extent of occurrence (EOO): Yes
Number of Locations: 20-30
Continuing decline in number of locations: Yes
Population
Population severely fragmented: Yes
No. of subpopulations: 6-9
Continuing decline in subpopulations: Yes
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes

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