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Scope(s): Global
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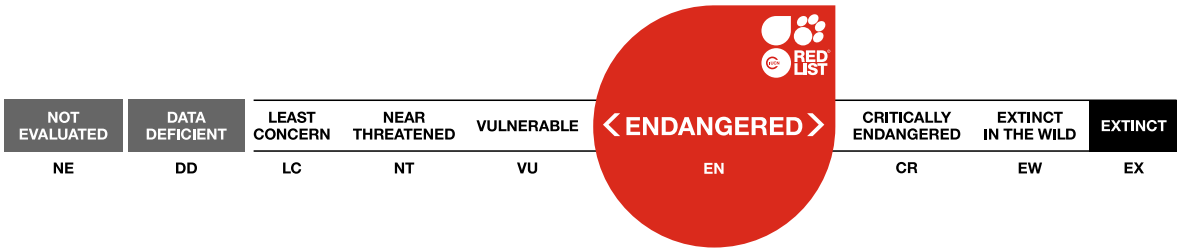
Rhizoplaca idahoensis, Idaho Grouse Pellet

Assessment by: Root, H., Rosentreter, R. & Hollinger, J.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Fungi	Ascomycota	Lecanoromycetes	Lecanorales	Lecanoraceae

Scientific Name: *Rhizoplaca idahoensis* Rosentr. & McCune

Common Name(s):

- English: Idaho Grouse Pellet

Taxonomic Source(s):

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

Taxonomic Notes:

Leavitt et al. (2019) confirmed the circumscription of this species.

Assessment Information

Red List Category & Criteria: Endangered B1ab(ii,iii,iv,v)+2ab(ii,iii,iv,v) ver 3.1

Year Published: 2021

Date Assessed: April 21, 2021

Justification:

Idaho Grouse Pellet (*Rhizoplaca idahoensis*) is narrowly endemic to the Little Lost River and Birch Creek Valleys in Idaho, United States of America. Its total area of occupancy is 48 km^2, and its extent of occurrence is 996 km^2. It grows over deep gravel calcareous alluvium soils and remains unattached to any substrates. The most serious threats to this species are sheep grazing, which reduces the population size and area of occupancy, and road building, which fragments subpopulations and reduces the population size (Rosentreter 1997). Both threats have reduced the extent and quality of habitat for the species over the past decade and are expected to continue to do so. Thus, *R. idahoensis* is Endangered B1ab(ii,iii,iv,v)+2ab(ii,iii,iv,v).

Geographic Range

Range Description:

Rhizoplaca idahoensis is restricted to the Little Lost River and Birch Creek Valleys in Idaho, United States of America.

Country Occurrence:

Native, Extant (resident): United States (Idaho)

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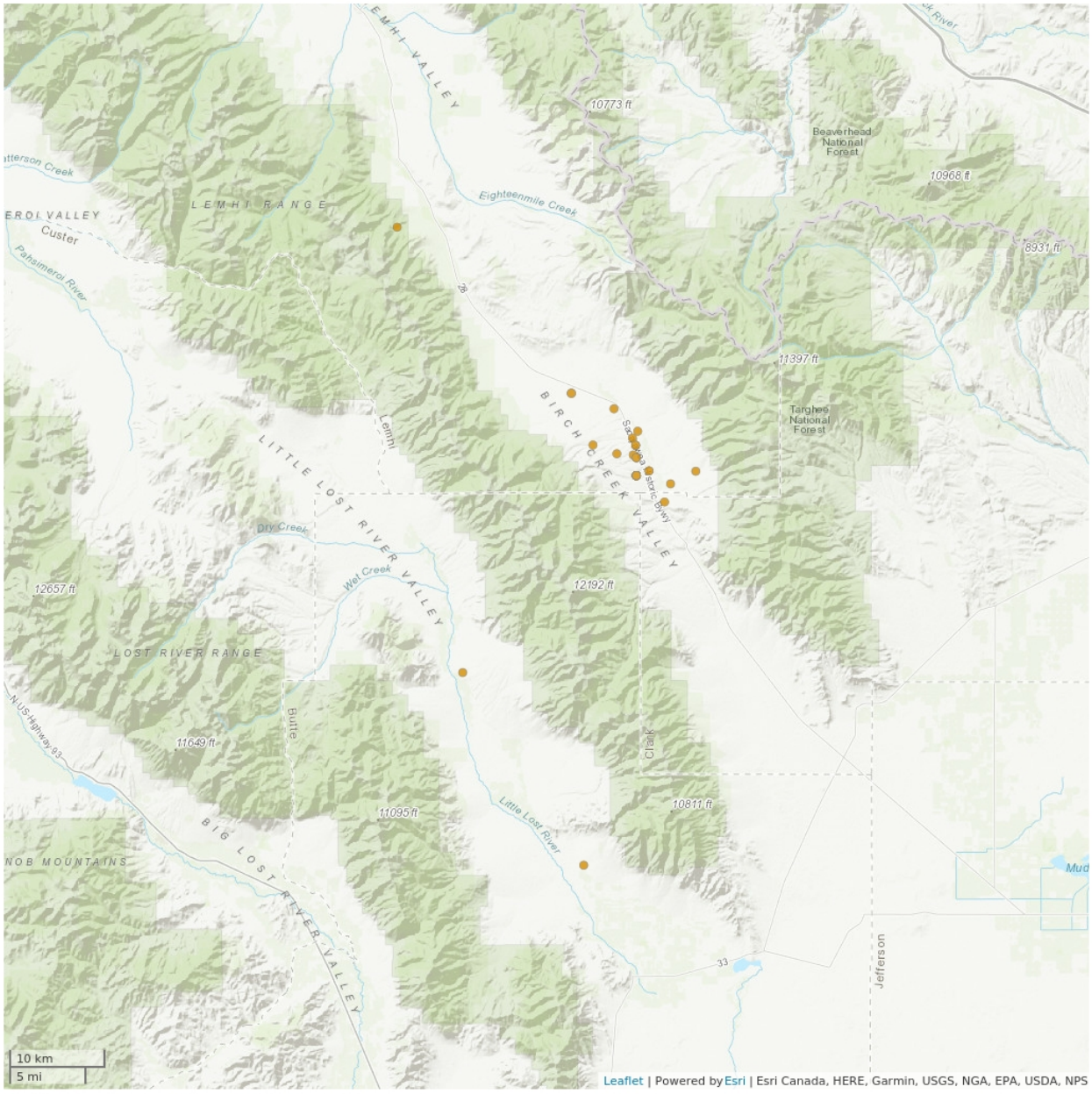
Distribution Map



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.

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Population

Rhizoplaca idahoensis can be very locally abundant, with subpopulation sizes in the thousands. However, subpopulations are very isolated. Subpopulations have likely been fragmented by sheep grazing and road construction. Due to human activities, there are likely now over 20 sites, where in the past they would have been contiguous. Sheep grazing has the potential to affect an entire valley, and thus this species occurs at only two locations. Native pronghorn antelope also eat this species in the winter, but it is unknown to what extent this herbivory affects populations or changes over time (Thomas and Rosentreter 1992).

Current Population Trend: Decreasing

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

Rhizoplaca idahoensis grows on deep gravel calcareous alluvium basins and benches between 2,100 and 2,400 m. It is unattached to the soil or rocks and is considered a 'vagrant' lichen. The climate where it occurs is cold, arid, and continental, an unusual climatic combination in the region.

Systems: Terrestrial

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

There are no known commercial uses of this lichen.

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

The main threat to *Rhizoplaca idahoensis* is sheep grazing (Rosentreter 1997). Cattle apparently do not impact this species. Road construction is another major threat as it fragments subpopulations because these 'vagrant' lichens tend to be trapped by and accumulate into road ditches which are unfavourable microsites (Rosentreter 1993, 1997, Rosentreter and McCune 1992). Some invasive species, including *Alyssum desertorum*, *Bromus tectorum*, *Centaurea stoebe* ssp. *micranthos, Lepidium perfoliatum, Rhaponticum reptans,* may tend to exclude this lichen. Wind farm development may be an additional threat, along with powerlines and telephone poles.

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

This species is state listed in Idaho as S2 and subpopulations occur on two types of federally held lands, Bureau of Land Management and National Forest Land. Excluding sheep grazing from areas where the species remains is essential, along with site protection and management. Raising awareness of the threats facing soil-dwelling lichens, including Idaho Grouse Pellet, is an additional conservation need.

There are multiple outstanding research questions that must be addressed to aid in recovery of *Rhizoplaca idahoensis*, including: 1) developing methods for mitigating the obstructive effects of gravel roads and reducing mortality in ditches, 2) on the ground surveys to locate possible additional locations (e.g. other valleys with similar geology and climate), and 3) monitoring projects to quantify the rate of decline in population sizes.

Credits

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Reviewer(s): Allen, J.

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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	Resident	Suitable	Yes

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
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.3. Agro-industry grazing, ranching or farming	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
3. Energy production & mining -> 3.3. Renewable energy	Ongoing	Majority (50-90%)	Causing/could cause fluctuations	Medium impact: 6
	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		
4. Transportation & service corridors -> 4.1. Roads & railroads	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
4. Transportation & service corridors -> 4.2. Utility & service lines	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 2. Species Stresses -> 2.1. Species mortality		

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		2. Species Stresses -> 2.2. Species disturbance		
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.2. Named species (Alyssum desertorum)	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	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 (Centaurea stoebe)	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	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 (Lepidium perfoliatum)	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	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 (Rhaponticum repens)	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	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	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		

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

Conservation Action Needed
2. Land/water management -> 2.1. Site/area management
2. Land/water management -> 2.2. Invasive/problematic species control
4. Education & awareness -> 4.3. Awareness & communications

Research Needed

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

Research Needed
1. Research -> 1.2. Population size, distribution & trends
2. Conservation Planning -> 2.2. Area-based Management Plan
3. Monitoring -> 3.1. Population trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km²): 48
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km²): 996
Continuing decline in extent of occurrence (EOO): Unknown
Extreme fluctuations in extent of occurrence (EOO): Unknown
Number of Locations: 2
Continuing decline in number of locations: No
Extreme fluctuations in the number of locations: No
Lower elevation limit (m): 2,100
Upper elevation limit (m): 2,400
Population
Continuing decline of mature individuals: Yes
Extreme fluctuations: No
Population severely fragmented: Yes
Continuing decline in subpopulations: Yes
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes

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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.

The IUCN Red List Partners are: ABQ BioPark; Arizona State University; BirdLife International; Botanic Gardens Conservation International; Conservation International; Missouri Botanical Garden; NatureServe; Re:wild; Royal Botanic Gardens, Kew; Sapienza University of Rome; Texas A&M University; and Zoological Society of London.