

Heritage Rank Status Factors

Elcode NLCAL00002
Gname CALICIUM ADSPERSUM
Gcomname paleface stubble

Number of Occurrences

C = 21- 80

Comments Number of known occurrences worldwide is probably less than 100 (including many historic); Number of known occurrences in North America = 11; Number of known occurrences in California = 1; Number of known occurrences in Oregon = 3; Number of known occurrences in Washington = 1; Number of known occurrences in British Columbia = 5. Although the number of extant occurrences worldwide is unknown, the North American occurrences (collections) are recent and are mostly extant. Goward (1999) suggests the occurrence of this species in Arizona and Mexico, however appropriate habitat is unlikely in those states and the key in that publication does not mention the green pruina, which could allow for other species with spirally ornamented spores to be improperly identified as *C. adspersum*.

Number of Occurrences with Good Viability

U = Unknown what number of occurrences with good viability

Comments It is impossible to determine how many known occurrences have good viability, particularly because this species occurs on non-permanent substrates. My educated guess from many years of experience with calicioids would be that there may be more than 125 (category F) viable occurrences remaining worldwide (including currently unknown occurrences).

Population Size

U = Unknown

Comments

Range Extent

H = > 2,500,000 km² (greater than 1,000,000 square miles)

Comments Global distribution "Uncommon in southern Sweden and Finland, very rare in Norway and Denmark [...] wide-ranging species otherwise also known from Continental Europe, North America and the Southern Hemisphere (ssp. *australe* in Australia, New Zealand and southernmost South America)" (Tibell 1999). In North America, known only from about 11 specimens, all from the Pacific Northwest (Peterson & Rikkinen 1999).

Area of Occupancy

A = <0.4 km² (less than about 100 acres)

LA = <4 km (less than about 2.5 miles)

Comments Occupancy for epiphytic lichens and fungi can be difficult to estimate, particularly for calicioid species (including this species) which often occur as colonies covering only a few square centimeters on single tree trunk within a stand and then again several hundred meters away. The occupancy given above is roughly estimated as the total worldwide distribution of the species; the actual coverage of the species condensed so as to be continuous may not be much more than 1 hectare.

Long-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, and/or Number or Condition of Occurrences

B = Large Decline (decline of 75-90%)

Comments Most calicioid lichens and fungi inhabit aged bark or wood in sheltered locations protected from direct rain interception. This species is very restricted to the bark of old trees; in the Pacific Northwest of North America, all known occurrences are on conifers > 200 years old (Peterson unpublished data, Peterson & McCune 2000). Removal of old-growth forest in North America and through the rest of the species' distribution has undoubtedly had severe impacts on the number of populations, population sizes, and average dispersal distance necessary to colonize new substrates.

Short-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, and/or Number or Condition of Occurrences

D = Declining. Decline of 10-30% in population, range, area occupied, and/or number or condition of occurrences

Comments With advances in conservation, the removal of old-growth forests throughout the species range is slowing, but has not stopped.

Threats

B = Moderate and imminent threat. Threat is moderate to severe and imminent for a significant proportion (20-60%) of the population, occurrences, or area. Ecological community occurrences are directly impacted over a moderate area, either causing irreversible damage or requiring a long-term recovery.

Scope	Moderate	Severity	High	Immediacy	High
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Comments Worldwide, the species has gone through drastic declines since pre-industrial times. The Pacific Northwest, due to logging, has been no exception. However, the rate of loss in the Pacific Northwest has slowed. Although little is known about the reproductive and dispersal biology of this species, it is thought that the species can overcome some habitat fragmentation. Since the species is quite rare in the Pacific Northwest, and apparently throughout the rest of its distribution, the species is at some risk of extirpation or extinction. That, combined with its strong association with old growth warrens significant consideration in conservation actions.

Number of Appropriately Protected and Managed Occurrences

C = Several (4-12) occurrences appropriately protected and managed

Comments

Intrinsic Vulnerability

A = Highly Vulnerable. Species is slow to mature, reproduces infrequently, and/or has low fecundity such that populations are very slow (> 20 years or 5 generations) to recover from decreases in abundance; or species has low dispersal capability such that extirpated populations are unlikely to become reestablished through natural recolonization (unaided by humans). Ecological community occurrences are highly susceptible to changes in composition and structure that rarely if ever are reversed through natural processes even over substantial time periods (> 100 years).

Comments Given high vulnerability rank because it will not return to a forest for a century or more after a stand-initiating disturbance.

Environmental Specificity

A = Very Narrow. Specialist or community with key requirements scarce.

Comments

Other Considerations

NRANK - N2N3. Recommended BC rank is S1.

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Grank G3G4 **Grank Date** 12/5/2002

Reasons

Although distributed over multiple continents, the species is stated as being uncommon to rare throughout its range. Additionally, the species has experienced dramatic declines since pre-industrial times. Particularly rare and not secure in North America.

BCD Sources

New Sources

ISMS (Interagency Species Management System). 5 August, 2002.

Peterson, E. B. (Search of personal herbarium on 1 November, 2002) Address: Nevada Natural Heritage Program, 1550 E. College Parkway, Carson City, NV

Peterson, E. B. & McCune, B. 2000. Environmental Relations of Calicioid Lichens and Fungi in a Temperate Landscape. In: Peterson, E. B. Analysis and prediction of patterns in lichen communities over the western Oregon landscape. Ph.D. dissertation, Oregon State University, Corvallis, OR.

Peterson, E. B. & Rikkinen, J. 1999. Range extensions of selected pin-lichens and allied fungi in the Pacific Northwest. *Bryologist* 102(3): 370-376.

Rikkinen, J. 2003. Calicioid lichens and fungi in the forests and woodlands of western Oregon. *Annales Botanici Fennici* (accepted, should come out in the first volume of 2003).

Selva, S., 7 November 2002. Personal communication. Address: Division of Natural and Behavioral Sciences, University of Maine at Fort Kent, Fort Kent, ME.

Tibell, L. 1975. The Caliciales of boreal North America. *Symbolae Botanicae Upsalienses* 21(2): 1-128.

Tibell, L. 1999. Caliciales. *Nordic Lichen Flora* 1: 20-93.