

Heritage Rank Status Factors

Elcode NFSM000128
Gname PHAEOCOLLYBIA SCATESIAE
Gcomname

Number of Occurrences

C = 21- 80

Comments The PHSC13 entries in the ISMS 2002 database are correct but do not include historical data, erroneously reported under PHCA40 headings. Therefore the ISMS 2002 data is added to data from Norvell (1995, 1998a, pers comm 2002). In the northern spotted region ISMS 2002 cites 13 occurrences are cited for *P. scatesiae* and Norvell cites 14 for a total of 27 confirmed occurrences.

Number of Occurrences with Good Viability

D = Some (13-40) occurrences with good viability

Comments All 13 ISMS occurrences are extant and 10 of the 14 historical occurrences are believed located in areas that have not yet been logged or undergone development (Norvell 2002 pers comm).

Population Size

U = Unknown

Comments Records reflect only species occurrence, i.e. fruitbodies, not numbers of individuals. Genets of ectomycorrhizal fungi cannot be delimited without DNA sampling. Distribution is extremely spotty and the populations appear to be unusually small for the genus.

Range Extent

F = 20,000-200,000 km² (about 8,000-80,000 square miles)

Comments Endemic to the northern spotted region in western North America, *Phaeocollybia scatesiae* is known from the Olympic peninsula in Washington, from the northern Oregon coast south to Van Damme State Park in California and east to Larch Mountain on the Columbia Gorge and south along the western slope of the Cascade Range to southeast of Salem. (ISMS 2002 database; Norvell 1995a, 1998ab, 2002 pers comm). [The one marker on the ISMS GIS map for PHSC13 east of the Cascade crest in northern California does not appear linked to any known collection and should be disregarded.]

Area of Occupancy

U = Unknown

LU = Unknown

Comments Occupancy is highly spotty and cannot be extrapolated for this organism, which appears restricted to fairly complex environments. For fungi can only estimate area occupancy from fruitbodies as vegetative organism is underground had has unknown biological and ecological requirements that determine how and when ectomycorrhizal associations are formed with coniferous host trees. The fungus fruits sporadically (not annually).

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

D = Moderate Decline (decline of 25-50%)
E = Relatively Stable ($\pm 25\%$ change)

Comments Due to the extremely spotty nature of the occurrences, it is difficult to project a long-term trend in population size, extent of occurrence, or the area of occupancy. Ectomycorrhizal fungal stability in general is tied to the stability of the coniferous partner trees. It would be fair to estimate a long-term trend in population size based on the forest trend. The species occurs in mid-successional to LSOG forests. It appears to grow slowly, fruit sporadically, and is less dependent upon spore dispersal than on associations with mycorrhizal partners. (Norvell 1998ab)

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
E = Stable. Population, range, area occupied, and/or number or condition of occurrences unchanged or remaining within $\pm 10\%$ fluctuation

Comments Ectomycorrhizal fungal stability in general is tied to the stability of the coniferous partner trees. It would be fair to estimate a short-term trend in population size based on the forest trend.

Threats

F = Widespread, low-severity threat. Threat is of low severity but affects (or would affect) most or a significant portion of the population, occurrences, or area. Ecological community occurrences are not threatened severely, with changes reversible and recovery moderately rapid.

Scope Moderate Severity Low Immediacy Low

Comments Ectomycorrhizal fungal stability depends on the stability of the coniferous partners, so that what threatens the extant forests threatens the organism. This species has been collected from mid-successional forests and from recently moderately thinned late-successional forests as well as from pristine 400 yo old forests (Norvell 1998ab, Norvell pers. Comm. 2002). However it is extremely spotty in distribution and populations appear to be unusually small (Norvell pers comm 2002). Hot fires, development, and heavy logging activities could exterminate known populations.

Number of Appropriately Protected and Managed Occurrences

C = Several (4-12) occurrences appropriately protected and managed
D = Many (13-40) occurrences appropriately protected and managed

Comments There are a total of 6 permanently protected occurrences and 7 that lie within LSR. ISMS 2002 cites 3 in permanent protected preserves, 4 in late-successional reserves, and ~1 in riparian reserves. Norvell (pers comm 2002) notes 3 in permanent preserves, and 3 in late-successional reserves. If governmental management policies dictate opening late-successional and/or riparian reserves to logging or development, the number of protected and managed occurrences would be ranked as "C". It is also not known whether the sites in the temporary reserves are managed sufficiently to ensure their survival.

Intrinsic Vulnerability

B = Moderately Vulnerable. Species exhibits moderate age of maturity, frequency of reproduction, and/or fecundity such that populations generally tend to recover from decreases in abundance over a period of several years (on the order of 5-20 years or 2-5 generations); or species has moderate dispersal capability such that extirpated populations generally become reestablished through natural recolonization (unaided by humans). Ecological community occurrences may be susceptible to changes in composition and structure but tend to recover through natural processes given reasonable time (10-100 years).

Comments Ectomycorrhizal fungal vulnerability generally is linked to that of the coniferous partner trees. It is vulnerable to anything that threatens the forest habitat, including hot fires, heavy logging (not moderate to light thinning, Norvell pers. comm. 2002), and development.

Environmental Specificity

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

Comments *P. scabies* is a mycorrhizal fungus that occurs in well-decomposed wood or woody humus in densely canopied coniferous forests from where it sends long rhizomorph-like strands that appear to connect it to its symbiotic partner. It is most frequently (but not exclusively) associated with *Picea sitchensis*, *Abies*, and/or (possibly) *Vaccinium* species. Its precise biological and ecological requirements still remain unknown. (Norvell 1998ab, 2002 pers comm).

Other Considerations

NRANK - N3N4. Distribution is extremely spotty. Is usually easily identified in the field by the densely cespitose fruitbodies that can number over 100 within a single clump. Can be difficult to identify if only a single fruiting body is collected. Fruits only sporadically, but one site in the Van Duzer Corridor of Oregon has been sampled at least six times since its discovery in 1992. (Norvell pers comm 2002). Additional occurrences are to be expected in coastal spruce or low-lying coniferous forests with *Abies* present. Fruits late in the season and so may not have been found by previous researchers. There are several protected sites.

Edition 11/18/2002 **Edauthor** Lorelei L Norvell

Grank G3? **Grank Date** 11/18/2002

Reasons

The species probably is not sufficiently protected in certain areas of its range, although it appears long-lived: at the Van Duzer Wayside in Oregon, one site has been successfully sampled six times since 1992, and collections have been documented from the nearby Cascade Head Experimental Research Forest from 1970 to 1995. It remains vulnerable to hot fires. Total predicted occurrences are probably around ~40-50 within its overall range. Distribution is extremely spotty, localized small areas followed by absence in presumably prime habitat, so that large areas within the overall range appear uninhabited by the organism.. The spotty distribution and unpredictable phenology complicate ranking this organism.

BCD Sources

New Sources

Norvell. 1998a. The biology and taxonomy of Pacific Northwest species of *Phaeocollybia* Heim. 391 pp.

Norvell. 1998b. . Observations on the development, morphology, and biology of *Phaeocollybia*. *Mycological Research* 102:615-630.

Norvell. 1995. ROD: Strategy 1 Fungal Species Evaluation (30 gilled and non-gilled Basidiomycete Strategy 1 species). Unpubl. report on file in the Regional Mycology Lab, Corvallis, Oregon.

Castellano et al. 1999. Handbook to Strategy 1 Fungal Species in the Northwest Forest Plan. USDA-FS PNWRS PNW-GTR-476.

ISMS map on PHSC13 & ISMS 2002 database.