

Heritage Rank Status Factors

Elcode NFSM000129
Gname PHAEOCOLLYBIA SIPEI

Gcomname

Number of Occurrences

C = 21- 80

Comments There are 26 occurrences represented by 68 collections of *Phaeocollybia sipei* in Oregon. Continued fungal surveys may uncover more sites. (Norvell 1995, 1998ab, pers. Comm 2002; Norvell & Exeter 2003; Castellano 1999; ISMS 2002 data)

Number of Occurrences with Good Viability

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

Comments 25 occurrences are probably extant + 1 dubious outlier. 2 lie within permanently protected areas, 7 lie within late-successional reserves and ~3-11 in riparian reserves and so are protected at the present time.

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.

Range Extent

E = 5,000-20,000 km² (about 2,000-8,000 square miles)

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

Comments An endemic restricted to the northern spotted owl region in Pacific Northwest North America and apparently restricted to Oregon, *Phaeocollybia sipei*, ranges from Oswald West south to Fogarty Creek State park and east within the Willamette Valley fringe to Eugene and southern Lane County. (Norvell 1995, 1998ab, 2002 pers comm; Norvell & Exeter 2003; Castellano 1999; ISMS Database 2002 and GIS map for *Phaeocollybia sipei*). One dubious outlying collection from the Hoh Valley in Washington state's Olympic National Park is not cited in the above range.

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. There are large areas of unsuitable habitat within the overall range. Area of occupancy can only be roughly approximated from fungal fruitbodies as the vegetative organism is hidden from site within the substrate. *Phaeocollybia sipei* has unknown biological and ecological requirements that determine how and when symbiotic associations are formed with partners. (Norvell 1998ab).

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

E = Relatively Stable ($\pm 25\%$ change)

Comments Due to *Phaeocollybia sipei*'s spotty distribution, it is difficult to project a long-term trend in population size, extent of occurrence, or area of occupancy. *Phaeocollybia sipei* is ectomycorrhizal, so its trends are closely linked to the trees that are its symbiotic partners in mid- to late-successional forests where it is thought to form mycorrhizal associations with coniferous partners, in particular *Picea*, *Tsuga*, and *Pseudotsuga*. Individuals are less dependent upon spore dispersal than upon mycelial interactions with other individuals and their mycorrhizal partners. Trends will also be determined by occurrence of hot fires and human alteration of the habitats. *Phaeocollybia sipei* appears to withstand light thinning (Norvell & Exeter 2003); Absent natural catastrophes or extreme human interference, the trend is considered to be stable over the long term.

Short-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, 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 *Phaeocollybia sipei* is an ectomycorrhizal fungus dependent upon the health of its symbiotic partner, inferred to be *Picea*, *Tsuga*, and/or *Pseudotsuga*. Natural catastrophes or human activities that imperil the health of those conifers will compromise both tree and fungus. Current occurrences of *Phaeocollybia sipei* are uncommon and restricted to Oregon; 12-20 are thought to occur in permanently protected sites, late-successional reserves and riparian reserves; therefore the species is believed to be relatively secure over the short-term (Norvell 1998ab, Norvell & Exeter 2003, ISMS 2002 data).

Threats

G = Slightly threatened. Threats, while recognizable, are of low severity, or affecting only a small portion of the population, occurrences, or area. Ecological community occurrences may be altered in minor parts of range or degree of alteration falls within the natural variation of the type.

Scope	Low	Severity	Unknown	Immediacy	Low
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Comments Whatever threatens the extant forest will threaten the fungus. This species has been collected from mid- to late-successional forests. Data are lacking on resampling, so it is not known the life expectancy of individuals or populations. Like the forest, *Phaeocollybia sipei* is threatened by hot fires, road construction or other development, and clearcutting, but appears to be able to withstand light to moderate thinning (Norvell pers comm 2002, Norvell & Exeter 2003).

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 ISMS (2002), Norvell (1995, 1998a, 2002 pers comm) and Norvell & Exeter (2003) cite ~12-20 (21) occurrences in protected areas: 2 (1) in permanent protected preserves, 7 in late-successional reserves, and ~ 3-11 in riparian reserves. If governmental management policies dictate opening late-successional and/or riparian reserves to clearcutting, road construction, or other development, the number of protected and managed occurrences could dramatically decrease to 2 (Rank "B"). Additionally, many sites in temporary reserves may not be managed appropriately at the present time.

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 is linked to that of the symbiotic partner (here conifer species). This fungus may be long-lived but also relatively slow-growing; therefore climax communities occur more commonly in older stands. (Norvell 1998ab, Norvell & Exeter 2003). It is vulnerable to anything that threatens the forest habitat, including hot fires, road construction and development, and clearcutting. It seems resilient to light to moderate thinning (Norvell & Exeter 2003).

Environmental Specificity

B = Narrow. Specialist or community with key requirements common.

Comments *Phaeocollybia sipei* is generally found in complex mid to late-successional or old growth coniferous rainforests where it forms symbiotic partnerships with *Picea*, *Tsuga*, and/or *Pseudotsuga*. Its precise biological and ecological requirements are unknown. It is generally found in moist coniferous forests up to 2000' in elevation (Norvell & Exeter 2003). Like all *Phaeocollybias*, it is extremely patchy in distribution. (Norvell 1998ab).

Other Considerations

Nrank - N3?. There are no known synonyms for *Phaeocollybia sipei*.

Edition 11/21/2002 **Edauthor** Lorelei L Norvell

Grank G3? **Grank Date** 11/21/2002

Reasons

The species is restricted to the northern spotted owl region in the northern coast and Willamette Valley fringe in Oregon; there is one possible outlier population collected on Washington's Olympic National Park (Hoh Valley). *Phaeocollybia sipei* is uncommon to rare, with 25 extant occurrences, of which 12-20 lie in currently protected forest reserves. It is endemic to the northern spotted owl region of Oregon (and possibly Washington). Its patchy distribution precludes estimation of population size and area of occupancy. The current known populations are probably relatively stable over the short term, given the number of protected sites. Unprotected occurrences will be threatened by road construction, development, and clearcutting or heavy thinning. Moderate to light thinning is not considered a threat. All occurrences are imperiled by hot fires.

BCD Sources

New Sources

Norvell . 1995. ROD: Strategy 1 Fungal Species Evaluation (30 gilled and non-gilled Basidiomycete Strategy 1 species). Unpubl. report on file at the Regional Mycology Lab in in Corvallis, Oregon. ALSO Norvell. 1998a. The biology and taxonomy of Pacific Northwest species of *Phaeocollybia* Heim. 391 pp. ALSO Norvell. 1998b. Observations on the development, morphology, and biology of *Phaeocollybia*. *Mycological Research* 102:615-630. ALSO Norvell & Exeter. 2003 in press. Ectomycorrhizal epigeous basidiomycete diversity in Oregon's coast montane *Pseudotsuga menziesii* forests. *New York Botanical Memoirs*. ALSO Castellano et al. 1999. Handbook to Strategy 1 Fungal Species in the Northwest Forest Plan. USDA-FS PNWRS PNW-GTR-476. ALSO ISMS 2002 database with GIS map for PHSI6.