

Heritage Rank Status Factors

Elcode NFSM000117
Gname PHAEOCOLLYBIA ATTENUATA

Gcomname

Number of Occurrences

D = 81 - 300

Comments ~120 known occurrences have been confirmed for this organism; this includes 39 reports of collections made between 1900 and 1994. (Norvell 1998a, 1998c, pers. Comm. 2002; Dreisbach et al. 2002; ISMS database 2002); Castellano 1999).

Number of Occurrences with Good Viability

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

E = Many (41-125) occurrences with good viability

Comments 77 occurrences are believed extant; of those 33 sites are in protected areas (Dreisbach et al. 2002; Norvell pers. comm. 2002).

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. Dreisbach et al. (2002) note that 28 "sites" occur within the Myrtlewood Research Area, which has a 3-mile radius. This implies that the area of occupancy cannot be extrapolated from the numbers reported on ISMS 2002.

Range Extent

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

Comments Endemic to the northern spotted owl region in western North America. Occurrences range from the Olympic Peninsula south to the San Francisco of California (where it is considered rare) east to Mt. Rainier National Park and south to the west slope of the Cascades near Eugene, Oregon (Norvell 1998ac).

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, one can only estimate the area of occupancy from fruitbodies as the vegetative organism is underground and 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) and produces many small scattered fruitbodies (Norvell 1998ab).

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 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 appears restricted to mature (i.e. 65 year old) to late-successional/old-growth forests and has not been collected from disturbed habitats. It appears to grow slowly 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

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

D = Moderate, non-imminent threat. Threat is moderate to severe but not imminent for a significant portion of the population, occurrences, or area.

Scope	Moderate	Severity	Moderate	Immediacy	Unknown
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Comments Ectomycorrhizal fungal stability depends on the stability of the coniferous partners, so that what threatens the extant forests threatens the organism. This species appears to be restricted to mature (i.e. 65 year old) to late-successional/old-growth forests and has not been collected from disturbed habitats (Norvell 1998ab, Norvell pers. Comm. 2002). It also appears to grow slowly (Norvell 1998ab). It would be threatened by hot fires, development, and heavy logging activities. Dreisbach et al. (2002) note that 28 sites occur within the Myrtlewood Research Area, which has a 3-mile radius; a hot fire could halve the extant sites in Oregon.

Number of Appropriately Protected and Managed Occurrences

D = Many (13-40) occurrences appropriately protected and managed

E = Very many (>40) occurrences appropriately protected and managed

Comments See proviso above. Dreisbach et al. (2002) cite 33 sites as occurring in reserves, of which only 20 are believed extant. ISMS 2002 cites 23 occurrences in non-protected areas, 13 in permanent protected reserves, 25 in late-successional reserves, and ~10 in riparian reserves. If governmental management policies dictate ending late-successional and/or riparian reserves, the number of protected and managed occurrences would be ranked as "D". 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. This fungus is thought to be relatively slow-growing and associated with older stands and is normally not found in plantation settings. (Norvell 1998ab). 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.

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

Comments *Phaeocollybia attenuata* appears restricted to mature (i.e. 65 year old) to late-successional/old-growth forests and has not been collected from disturbed habitats. It appears to grow slowly; its precise biological and ecological requirements are not known. It is more commonly found in highly humic soils in moist coniferous (*Picea sitchensis*, *Tsuga heterophylla*, *Abies amabilis*) habitats. Two small outlier collections were made in California in a mixed deciduous-coniferous (*Lithocarpus*, *Tsuga*, *Sequoia*) forest (Norvell 1998ab).

Other Considerations

NRANK - N3. *Phaeocollybia attenuata* does not produce fruitbodies annually and appears tied to mature to older forests. The known occurrences listed in the ISMS database do include historical data and may not represent extant populations. The species can be locally abundant but is generally uncommon to rare throughout its range.

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

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

Reasons

Endemic to the northern spotted owl region in western North America. *Phaeocollybia attenuata* is a relatively uncommon to rare species that is patchy in distribution throughout its range. It has been found primarily in older coniferous forests above 65 years in age and is more frequently encountered in late-successional or old-growth *Picea sitchensis* or *Tsuga heterophylla* forests in low-lying coastal areas.

BCD Sources

New Sources

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. 1998c. ROD: Strategy 3 Fungal Species Evaluation (11 gilled Basidiomycete Strategy 3 species). Unpubl. report on file at the Regional Mycology Lab, Corvallis, Oregon. ALSO Castellano et al. 1999. Handbook to Strategy 1 Fungal Species in the Northwest Forest Plan. USDA-FS PNWRS PNW-GTR-476. ALSO Dreisbach, Mueller, Exeter, McFarland, Cushman. 2002. 2002 Survey and Manage Step 2 Worksheet.