

Washington Status Factors

Elcode NFSM000117
Gname PHAEOCOLLYBIA ATTENUATA
Gcomname

Number of Occurrences

B = 6 - 20

Comments 9 occurrences have been confirmed for this organism, all reported prior to 1994 (ISMS 2002, Dreisbach et al. 2002). Since 1990, 7 occurrences have been confirmed and are believed extant. . (Norvell 1998c, pers comm. 2002).

Number of Occurrences with Good Viability

C = Few (4-12) occurrences with good viability

Comments 7 occurrences are believed extant (Norvell 1998c, pers comm 2002), all of which are thought to occur in currently protected reserves (Norvell 1998c, 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

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

Comments Endemic to the northern spotted region in western North America. Occurrences range from the Olympic Peninsula east to Mt Rainier National Park (ISMS 2002 map; 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

Comments Ectomycorrhizal fungal stability depends on the stability of the coniferous partners, so that what threatens the extant forests threaten the organism. This species appears 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) Would be threatened by hot fires, development, and heavy logging activities.

Number of Appropriately Protected and Managed Occurrences

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

Comments ISMS 2002 which includes historical occurrences with extant occurrences, cites 5 in permanent protected reserves, 2 in late-successional reserves. If governmental management policies dictate ending late-successional reserves, the total number of protected and managed occurrences would be 5. 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

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.

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Reasons

Phaeocollybia attenuata is rare in Washington. Occurrences range from the Olympic Peninsula east to Mt Rainier National Park. It has been found primarily in older coniferous forests, above 65 years in age, and is relatively more abundant 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.