

# California Status Factors

**Elcode** NFSM000117  
**Gname** PHAEOCOLLYBIA ATTENUATA  
**Gcomname**

## Number of Occurrences

B = 6 - 20

**Comments** 16 known occurrences have been confirmed in California, 14 of which were made between 1900 and 1994. (Norvell 1998a, 1998c; Dreisbach et al. 2002; ISMS database 2002; Castellano 1999).

## Number of Occurrences with Good Viability

B = Very few (1-3) occurrences with good viability

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

**Comments** 2 occurrences are believed to be extant (Dreisbach 2002), but most collections made since 1990 are probably still viable. 3 additional occurrences are known (Norvell 1998c) from 1990-1992 collections.

## 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 in Oregon, 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 km<sup>2</sup> (about 8,000-80,000 square miles)

**Comments** Endemic to the northern spotted region in western North America. In California, occurrences range from Crescent City south to the San Francisco area in the coastal lowlands and on the west slope of the California Coast Range. (Norvell 1998ac; ISMS 2002).

## 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). It would be threatened by hot fires, development, and heavy logging activities. The spotty distribution means that a number of sites occur within a small radius and are at increased risk to fire.

### **Number of Appropriately Protected and Managed Occurrences**

B = Few (1-3) occurrences appropriately protected and managed

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

**Comments** See proviso above. Dreisbach et al. (2002) cite only 2 occurrences as extant. ISMS 2002 cites 8 occurrences in non-protected areas, 4 in permanent protected reserves, and 2 in late-successional reserves. If governmental management policies dictate ending late-successional reserves, the number of protected and managed occurrences would be counted as 4, but this contractor cannot tell from the data supplied whether these represent historical or extant occurrences. 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

Specimens collected by this contractor in 1992 in the Van Damme State Forest were solitary and very small. The organism fruits only sporadically and not annually, is highly spotty in distribution, and appears tied to mature to older forests. Occurrences listed in the ISMS 2002 database include historical data and may not represent extant populations.

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

**Grank** S2?      **Grank Date** 11/18/2002

## Reasons

*Phaeocollybia attenuata* is generally rare in California, where it appears at the extreme southern edge of its range and has a patchy distribution from Crescent City south to the San Francisco area in the coastal lowlands and on the west slope of the California Coast Range. *Phaeocollybia attenuata* is most commonly found in low-lying mature to late-successional/old-growth coastal coniferous forests. Collections made in California contain fewer fruitbodies than those found in Oregon, which is believed to be the center of distribution for the species (Norvell 1998c). Its precise biological and ecological requirements remain unknown.

## 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.