# **Oregon 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 Oregon ISMS 2002 cites 11 and Norvell 1995a 10 occurrences = 21 total confirmed occurrences.

# **Number of Occurrences with Good Viability**

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

Comments

All 11 ISMS occurrences are extant and 7 of the 10 historical occurrences lie in areas that have not yet been logged or undergone development and are thus believed extant (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, in Oregon Phaeocollybia scatesiae is known from the Cascade Head Experimental Forest south along the Oregon coast south to the Coos Bay area and then east to Larch Mountain on the Columbia Gorge and south along the western slope of the Cascade Range to southeast of Salem. (ISMS 2002 databse; Norvell 1995a, 1998ab, 2002 pers comm).

# **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 ±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**

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 Low Immediacy Low

#### Comments

Ectomycorrhizal fungal stability depends on the stability of the coniferous partners, so that what threatens the extant forests threaten 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**

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

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

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

### Comments

There are a total of 3 permanently protected occurrences and 7 that lie within LSR; possibly 1-5 lie within riparian reserves. ISMS 2002 cites 2 in permanent protected preserves, 4 in late-successional reserves, and "5" in riparian reserves. Norvell (pers comm 2002) notes 1 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 "B". 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 scatesiae 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**

ORNHIC - List 3. 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** S3? **Grank Date** 11/18/2002

#### **Greasons**

The species appears fairly well protected in Oregon. 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 in protected reserves. Total predicted occurrences are probably around ~40 within Oregon. 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. ALSO Norvell. 1998b. . Observations on the development, morphology, and biology of Phaeocollybia. Mycological Research 102:615-630. ALSO 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. ALSO Castellano et al. 1999. Handbook to Strategy 1 Fungal Species in the Northwest Forest Plan. USDA-FS PNWRS PNW-GTR-476. ALSO ISMS map on PHSC13 & ISMS 2002 database.