Washington Status Factors

Elcode NFSM000130

Gname PHAEOCOLLYBIA SPADICEA

Gcomname

Number of Occurrences

A = 1 - 5

Comments Four verified occurrences have been confirmed for this organism, of which at least 3 are believed extant (these include occurrences known to this contractor that have been collected since 1991). (Norvell 1998ac, pers. comm. 2002; Dreisbach et al. 2002; ISMS database 2002; Castellano 1999).

Number of Occurrences with Good Viability

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

Comments At least 3 occurrences are believed by this author to still exist.

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

C = 250-1,000 km2 (about 100-400 square miles)

Comments The species is known only from the Olympic Peninsula in Washington (Norvell 1998abc, ISMS map for Phaeocollybia spadicea). The species has not been found in British Columbia and is believed by this author to be at the northern extent of its range (Norvell pers comm 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. It is only possible to estimate area of occupancy from fungal fruitbodies as the larger vegetative organism is hidden underground. The species has unknown biological and ecological requirements that determine how and when ectomycorrhizal associations are formed with coniferous partners. 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 (±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

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

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	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 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, pers comm 2002). It also appears to grow slowly. (Norvell 1998ab) It would be threatened by hot fires, development, and heavy logging activities.

Number of Appropriately Protected and Managed Occurrences

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

Comments ISMS 2002 which includes historical occurrences with extant occurrences, cites 4 occurrences in permanently protected preserves. All three extant occurrences also lie within the preserve -- Olympic National Park.

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

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

Comments Phaeocollybia spadicea is restricted to very moist mesic late-successional and old-growth coniferous forests. It is associated with coastal or low-lying closed-canopy stands containing Tsuga heterophylla, Picea sitchensis, Pseudotuga menziesii) and rarely in mixed deciduous/coniferous (Pinus, Pseudotsuga, Lithocarpus, Quercus) forests (Norvell 1998ab). It appears to grow slowly, but its precise biological and ecological requirements are not known .

Other Considerations

Another as yet undescribed species shares many morphological similarities with P. spadicea as well as similar habitats, which may complicate future surveys. Distribution and phenology of P. spadicea, like all Phaeocollybias is patchy and unpredictable (Norvell 1998ab). Additional occurrences are to be expected in unexplored late-successional or old-growth forests in coastal or low-lying areas.

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Greasons

Phaeocollybia spadicea is known only from the Olympic Peninsula in Washington. The 3 protected occurrences may be sufficient to protect the species from heavy logging or development although not from hot fires. Total predicted occurrences in Washington may be ~10. Spotty distribution and unpredictable phenology complicate ranking this organism. Numerous collections made from one occurrence near Twin Creek in the Hoh Valley (Olympic National Park) appeared vigorous and well-developed., (Norvell pers comm 2002).

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. ALSO ISMS 2002 database and map on PHSP8.