

Oregon Status Factors

Elcode NFSM000039
Gname CORTINARIUS CYANITES

Gcomname

Number of Occurrences

A = 1 - 5

Comments The ISMS 2002 lists 1 occurrence and Norvell & Exeter (2003) list 2 occurrences of Cortinarius cyanites in Oregon, the latter represented by 8 collections. A search of the WTU, the University of Washington fungal herbarium (not available online) database and continuing fungal surveys should reveal more sites. Dr Michelle Seidl or Joe Ammirati of the University of Washington should be contacted for additional information on Oregon populations.

Number of Occurrences with Good Viability

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

Comments Only 3 recent occurrences are known in Oregon (ISMS 2002, Norvell & Exeter 2003)

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

D = 1,000-5,000 km² (about 400-2,000 square miles)

Comments Cortinarius cyanites, which has a northern temperate distribution in conifer, hardwood, and mixed forests, is known from Oregon from Polk County in the coast range south to Green Peak near Corvallis (Norvell & Exeter 2003; ISMS Database 2002 and GIS map for Cortinarius cyanites).

Area of Occupancy

U = Unknown

LU = Unknown

Comments Area of occupancy can only be roughly approximated from fungal fruitbodies as the vegetative organism is hidden from site within the substrate; its distribution is spotty and it appears restricted to fairly complex habitats. Cortinarius cyanites has unknown biological and ecological requirements that determine how and when symbiotic associations are formed with partners. (Ammirati 1998, Norvell pers comm 2002)

Long-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, and/or Number or Condition of Occurrences

C = Substantial Decline (decline of 50-75%)

D = Moderate Decline (decline of 25-50%)

Comments Cortinarius cyanites is an ectomycorrhizal fungus dependent upon the health of its symbiotic partner for its existence. Spotty distribution and lack of sufficient data complicate projection of

long-term trends for fungi. *Cortinarius cyanites* is seemingly symbiotic with both angio- and gymnosperms and is found in many different aged forests. Individuals are less dependent upon spore dispersal than upon mycelial interactions with other individuals and their mycorrhizal partners. The ranking author has made 8 collections of *Cortinarius cyanites* from two sites in early- and mid-successional Douglas fir forests; neither are protected from human intervention suggesting that these may be at risk to road construction, development, or clear-cutting (Norvell 2002 pers comm).

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 $\pm 10\%$ fluctuation

Comments *Cortinarius cyanites* is an ectomycorrhizal fungus dependent upon the health of its forest habitat. Natural catastrophes or human activities that imperil the forest will likewise imperil the fungus. Considering the fact that the ranking author has made 8 collections of *Cortinarius cyanites* from two sites in early- to mid-successional Douglas fir forests in the Oregon Coast range (Norvell & Exeter 2003), the short term trend may be regarded as relatively stable to declining, if the areas are logged within a short time.

Threats

C = Substantial, non-imminent threat. Threat is moderate to severe but not imminent (> 10 years) for most of the population, occurrences, or area.

Scope	High	Severity	Moderate	Immediacy	Low
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Comments In Oregon *Cortinarius cyanites* has been found in early to mid-successional forests, where it is associated with either Douglas-fir or western hemlock. (Norvell & Exeter 2003). Whatever threatens an extant forest and its symbiotic partners will threaten *Cortinarius cyanites*, which is therefore imperiled by hot fires, road construction or other development, and clearcutting, it appears to be able to withstand light to moderate thinning (Norvell pers comm 2002, Norvell & Exeter 2003). Two of the three known collections lie in unprotected areas, the third may or may not lie within a riparian reserve. All are deemed to be at risk.

Number of Appropriately Protected and Managed Occurrences

A = None. No occurrences appropriately protected and managed

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

Comments In Oregon only one extant occurrence of *Cortinarius cyanites* may or may not lie within a riparian reserve (it is possible that it also lies within the matrix open to logging and other development).

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 health is linked to that of the symbiotic partner (here both deciduous and coniferous trees). *Cortinarius cyanites* has been collected from early and mid-successional stands (Norvell & Exeter 2003) as well as from late-successional/old-growth forests (Smith 1939, Ammirati 1998). It is vulnerable to anything that threatens the forest habitat, including drought, insect infestations, hot fires, road construction and development, and clearcutting.

Environmental Specificity

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

Comments Cortinarius cyanites has been documented from forests of various ages and is believed to be associated with both deciduous and coniferous trees (Ammirati 1998, Norvell & Exeter 2003). However it is "fairly infrequent" (Ammirati 1998) and obviously has relatively narrow biological and ecological requirements that are not as yet known. In Oregon, it has been found in strictly coniferous habitats containing Douglas-fir and western hemlock (Norvell pers. Comm. 2002; Norvell & Exeter 2003).

Other Considerations

ORNHIC - List 3. No synonyms are known for Cortinarius cyanites Fr., which has a worldwide northern temperate distribution; it is considered infrequent everywhere. There are too few Cortinarius experts; thus the number of occurrences known are inferred to be under-reported for Oregon. Drs Joe Ammirati and Michelle Seidl should be consulted for further information.

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Grank S2S3 **Grank Date** 11/22/2002

Reasons

Cortinarius cyanites is an ectomycorrhizal fungus dependent upon the health of its symbiotic partner (in Oregon inferred to be either Douglas fir or western hemlock; Norvell pers comm 2002). Only 3 extant occurrences are known from Oregon, only one of which is possibly protected (if it is found to lie within a riparian reserve). While more occurrences are anticipated, the species should be regarded as infrequent. More confirmed collections of Cortinarius cyanites are needed before a final rank can be assigned.

BCD Sources

New Sources

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<http://www.funet.fi/pub/sci/bio/life/fungi/basidiomycetes/cortinariales/cortinariaceae/cortinarius/> ALSO
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