

Heritage Rank Status Factors

Elcode NFSM000134
Gname POLYOZELLUS MULTIPLEX
Gcomname Blue chanterelle

Number of Occurrences

C = 21 - 80
D = 81 - 300

Comments Polyozellus multiplex is known from Japan and North America (and possibly Australia -- unconfirmed report from BPI database). Incomplete data do not permit estimations of number of occurrences worldwide. Within the Pacific Northwest U.S., 33-57 recent collections have been reported (Norvell 1995, ISMS 2002). Many fruitbodies (which are choice edibles) are assumed to be collected for food and not reported. Nonetheless the species is regarded as uncommon to rare in the west.,

Number of Occurrences with Good Viability

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

Comments Data are too incomplete to permit estimates of viable occurrences outside the northern spotted owl region. The USDA-I ISMS 2002 database indicates that of 57 occurrences, at least 32 lie within permanently or temporarily protected reserves. As ectomycorrhizal species are tied to the health of their symbiotic partners (in this instance primarily *Abies* spp.), the other known occurrences can be predicted to remain viable as long as the forests are preserved.

Population Size

U = Unknown

Comments Genets of ectomycorrhizal fungi cannot be delimited without DNA sampling.

Range Extent

H = > 2,500,000 km² (greater than 1,000,000 square miles)

Comments Restricted to Japan and North America, with one unverified collection (BPI 11-18-02) reported from Australia. In North America it has been reported from AK, BC, WA, OR, ID, CA, NM, CO, MI, ON, QU, ME (Smith & Morse 1947, Smith 1968, m Bigelow 1978, Norvell 1995; Databases include BPI, DAVFP, OSC). In the Pacific Northwest it is restricted to old coniferous forests.

Area of Occupancy

E = 100-500 km² (about 25,000-125,000 acres)

LE = 1,000-5,000 km (about 620-3,000 miles)

Comments Can only extrapolate area of occupancy from fruitbodies as underground vegetative organism may produce many fruitbodies over a larger area. This species has unknown biological and ecological requirements that determine how and when ectomycorrhizal associations are formed with *Abies* spp. mycorrhizal partners. Assume a maximum of 100 acres per known occurrence.

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 Stability of occurrences outside the northern spotted owl region is yet to be determined, Presence in late-succession, mid-elevation to montane conifer forests suggests populations will remain fairly stable as long as such forests are maintained. Pollution and reduction of stand rotation ages may lead to a decrease in populations.

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 Development, logging, hot fires are all threats that will affect the stability of the non-protected occurrences. The 32 occurrences in currently protected preserves are assumed to be stable. It is possible that additional sites in unexplored forests will be found.

Threats

F = Widespread, low-severity threat. Threat is of low severity but affects (or would affect) most or a significant portion of the population, occurrences, or area. Ecological community occurrences are not threatened severely, with changes reversible and recovery moderately rapid.

Scope Moderate Severity Low Immediacy Low

Comments Threats to occurrences outside the northern spotted owl region are not addressed here but may be assumed to be the same as those below. Occurrences with the northern spotted owl region are threatened by development, hot fires, and forest clear cutting or heavy thinning, but probably not by low thinning. Logging is occurring in or predicted for the unprotected areas in the northern spotted owl region. Depending on a change in forest management or hot fire, the severity and immediacy of the threat could be moderate to extreme.

Number of Appropriately Protected and Managed Occurrences

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

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

Comments Protection of occurrences outside the northern spotted owl region is not addressed here. Of the 57 recent occurrences reported within the northern spotted owl region (ISMS database 2002), 4 are definitely not protected, 13 lie within permanently protected reserves, 13 lie within late-successional reserves, and approximately 6 lie within riparian reserves. If governmental management policies dictate ending late-successional and/or riparian reserves, the number of protected and managed occurrences would be ranked as "C". 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 The fungus is believed to be long-lived and slow-growing, with a low reproductive rate inferred, but not demonstrated, from its association with *Abies* roots in late-successional to very old growth conifer stands. Threatened by clearcutting, heavy thinning, or hot fires; probably not affected by low to moderate thinning.

Environmental Specificity

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

Comments Precise biological requirements are not known; however apparent preference for older *Abies* in late-successional and old-growth forests suggest narrow environmental specificity.

Other Considerations

NRANK N4? Synonyms include *Cantharellus multiplex* and *Craterellus multiplex*. Considered a choice edible.

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

Grank G4? **Grank Date** 11/18/2002

Reasons

Restricted to Japan and North America with one unverified collection reported from Australia. In North America, it has been reported from AK, BC, WA, OR, ID, CA, NM, CO, MI, ON, QU, ME. Occurrences are patchy, and the species is uncommon throughout its range, particularly in California where it should be considered rare. Total estimated current occurrences is believed to be slightly above 200. In the Pacific Northwest it is restricted to old coniferous forests. There are several protected western forest sites, but some reserves may be opened dependent upon changes in administration of the Northwest Forest Plan. Mycorrhizal species depend upon the health and preservation of associated coniferous partners, which are valuable timber targets. Other threats include fire, development, and commercial harvesting. Cultural characteristics and sexuality unknown. Additional occurrences are to be expected in areas where late-successional forests contain *Abies*. Considered a choice edible.

BCD Sources

New Sources

Smith & Morse 1947. *Mycologia* 39:497-53. ALSO Smith 1968. The Cantharellaceae of Michigan. *Michigan Botanist* 7: 143-18. ALSO Bigelow. 1978. *Mycologia* 70:710-712. ALSO Imazeki et al. 1988. Fungi of Japan [in Japanese]. ALSO Castellano et al. 1999. Handbook to Strategy 1 Fungal Species in the Northwest Forest Plan. USDA-FS PNWRS PNW-GTR-476. ALSO Norvell . 1995. ROD: Strategy 1 Fungal Species Evaluation (30 gilled and non-gilled Basidiomycete Strategy 1 species). Unpubl. report on file with the Regional Mycologist's office in Corvallis, Oregon. ALSO OSC herbarium: <http://mgd.nacse.org/cgi-bin/qml2.0> ALSO Pacific Forestry Center herbarium: http://www.pfc.cfs.nrcan.gc.ca/biodiversity/herbarium/searchbyfungus_e.html ALSO BPI (US National Collections): <http://nt.ars-grin.gov/fungaldatabases/databaseframe.cfm?CFID=225771&CFTOKEN=11762541> [NOTE all herbarium databases checked on 11-18-02.]