

# Washington Status Factors

**Elcode** NFSM000134  
**Gname** POLYOZELLUS MULTIPLEX  
**Gcomname** Blue chanterelle

## Number of Occurrences

C = 21- 80

**Comments** Norvell (1995) reported 12 historical occurrences for Washington, and Castellano et al. (1999) reported 7. The ISMS 2002 database cites 22 recent occurrences.

## Number of Occurrences with Good Viability

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

**Comments** Of the 22 ISMS (2002) occurrences, approximately ~20 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

E = 5,000-20,000 km<sup>2</sup> (about 2,000-8,000 square miles)

**Comments** All 22 Washington occurrences are restricted to the Cascade Range from the Okanagan NF south to the southern part of the Gifford Pinchot NF.

## Area of Occupancy

C = 4-20 km<sup>2</sup> (about 1,000-5,000 acres)

LC = 40-200 km (about 25-125 miles)

**Comments** Can only extrapolate area 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** 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 age may lead to 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 ~20 occurrences in currently protected preserves are assumed to be stable. It is possible that additional sites in unexplored forests will be found.

## 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** All occurrences are threatened by hot fires. Those lying in unprotected forests are threatened also by development and forest clear cutting or heavy thinning, but probably not by low thinning. Logging is occurring in or predicted for unprotected forests in Washington. Depending on forest management regimes or exposure to hot fires, the severity and immediacy of the threat could be moderate to extreme. The stability of the 11 occurrences in permanent forest reserves (national parks) appears secure.

## 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** Of the 22 recent occurrences reported within Washington (ISMS database 2002), 11 lie within permanently protected reserves, 8 lie within late-successional reserves, and ~1 lies within a riparian reserve. If governmental management policies open late-successional and/or riparian reserves to development or logging, 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

Synonyms include *Cantharellus multiplex* and *Craterellus multiplex*. The species is uncommon in Washington. Additional occurrences are to be expected in areas where late-successional forests contain mature to old *Abies* trees. Considered a choice edible.

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

**Grank** S4      **Grank Date** 11/18/2002

### Greasons

Total current occurrences are estimated at ~50. Most occurrences lie in currently protected forest reserves, but some may be opened by changes in Northwest Forest Plan philosophy. This mycorrhizal species depends upon the health and preservation of its associated coniferous partner (here *Abies*) and the surrounding forests, which are valuable timber targets in Washington. Other threats include fire, development, and (possibly) commercial harvesting. Cultural characteristics and sexuality unknown. Uncommon to rare.

### BCD Sources

#### New Sources

Smith & Morse 1947. *Mycologia* 39:497-53.

Smith 1968. The *Cantharellaceae* of Michigan. *Michigan Botanist* 7: 143-18.

Bigelow. 1978. *Mycologia* 70:710-712.

Imazeki et al. 1988. *Fungi of Japan* [in Japanese].

Castellano et al. 1999. Handbook to Strategy 1 Fungal Species in the Northwest Forest Plan. USDA-FS PNWRS PNW-GTR-476.

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.

OSC herbarium: <http://mgd.nacse.org/cgi-bin/qml2.0>

Pacific Forestry Center herbarium: [http://www.pfc.cfs.nrcan.gc.ca/biodiversity/herbarium/searchbyfungus\\_e.html](http://www.pfc.cfs.nrcan.gc.ca/biodiversity/herbarium/searchbyfungus_e.html)

BPI (US National Collections): [http://nt.ars-grin.gov/fungal\\_databases/databaseframe.cfm?CFID=225771&CFTOKEN=11762541](http://nt.ars-grin.gov/fungal_databases/databaseframe.cfm?CFID=225771&CFTOKEN=11762541) [NOTE all herbarium databases

checked on 11-18-02.]