

Heritage Rank Status Factors

Elcode NFSM000017
Gname BONDARZEWIA MESENERICA
Gcomname

Number of Occurrences

U = Unknown

Comments No data available for complete numbers of European and Asian collections. ~278 collections noted from the northern spotted owl region (ISMS summary, at variance with database). Current databases (ISMS, OSC, DAVFP, BPI and Castellano 1999, Norvell 1995) indicate that there have been at least 15 (CA), 150 (OR), and 50 (WA) documented collections from the PNW region. The ISMS-ONH 2002 data show 6 (CA), 73 (OR), 15 (WA) occurrences.

Number of Occurrences with Good Viability

U = Unknown what number of occurrences with good viability

Comments Data are unavailable regarding the number of viable occurrences worldwide. A number of the collections noted above represent repeat occurrences of the same organism, which is long-lived.

Population Size

U = Unknown

Comments The slow-working pathogen appears tied to a single-host tree and thus is fairly limited in scope. Each occurrence (not collection) can be assumed to represent one individual and rarely are two fruiting bodies found in the same general vicinity. Molecular analysis of recent survey collections may provide more data, but currently the population size is unknown.

Range Extent

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

Comments B mesenterica is found in northern temperate forests across Europe, Russia, Japan, India (one collection), and 5 states and 1 province of PNW North America [Gilbertson & Ryvardeen 1986, Bondartsev 1953, Castellano 1999, Norvell 1995, ISMS 2002 databases plus url websites for BPI, DAVP, and OSC on 11-18-02.]

Area of Occupancy

G = 2,000-20,000 km² (500,000-5,000,000 acres)

H = >20,000 km² (greater than 5,000,000 acres)

LG = 20,000-200,000 km (about 12,500-125,000 miles)

LH = >200,000 km (greater than 125,000 miles)

Comments Collections sites are noted for the Caucasus (Russia), Austria, Switzerland, Slovakia, and France in Europe, Japan, India, and in BC, WA, ID, OR, and CA in North America. It is likely to occur wherever there are coniferous forests containing Abies and Larix species (Gilbertson & Ryvardeen 1986, Bondartsev 1953).

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

E = Relatively Stable ($\pm 25\%$ change)

Comments As the fungus is dependent on late-successional or old-growth forests, the species appears to remain stable as long as the forests remain or other forests mature. If over 25% of the forests are eliminated through fire, pollution, development, or heavy logging, then the long term trend would be ranked at D.

Short-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, 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 The same caveats as noted for long-term trends hold here as well.

Threats

E = Localized substantial threat. Threat is moderate to severe for a small but significant proportion of the population, occurrences, or area. Ecological community occurrences are directly impacted over a small area, or in a small portion of their range, but threats require a long-term recovery.

Scope	Low	Severity	Moderate	Immediacy	Low
-------	-----	----------	----------	-----------	-----

Comments The primary threat to the species is the elimination of late-successional and old-growth forest habitats, through fire, pollution, development, mining, or logging activities. Alteration of forest management for shorter rotations and the accompanying decline of late-succession or old-growth habitats are seen as a long term threat.

Number of Appropriately Protected and Managed Occurrences

E = Very many (>40) occurrences appropriately protected and managed

Comments Data on the extra-North American communities is not known. Within the northern spotted owl region, 16 sites are not protected, 6 sites lie within permanently protected areas, 23 lie in late-successional reserves, and approximately 20 either within riparian reserves or within the unprotected matrix. If late-successional and riparian reserves are not permanently protected, the ranking above would change to (C).

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 well-being of the organism is tied to the presence of the late-successional/old-growth host conifer,

Environmental Specificity

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

Comments *B mesenterica* produces a white stringy rot and is a slow root parasite associated with only conifers such as *Abies* and *Larix* (Gilbertson & Ryvardeen 1986, Redhead & Norvell 1993). As such it requires late-successional or old-growth host trees in order to fruit.

Other Considerations

NRANK - N4. Also known as *Bondarzewia montana*, *Grifola montana*, *Polyporus montanus*, *Cerioporus montanus*. Considered a slow-acting root pathogen found in late-successional and old growth forests.

Somewhat common in more northerly latitudes but less so as proceed south.

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

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

Greasons

Since surveys have been instituted in the northern spotted region, the species has been commonly encountered in Washington and Oregon, yet remains elusive in California. Within that region it occurs on 6 permanently protected areas, 23 late-successional reserves, and ~20 riparian reserves. Its status in Europe, Russia, Japan, and India is unknown by the ranker. Its fruitbody is large and showy, facilitating its find in surveys.

BCD Sources

New Sources

Gilbertson & Ryvardeen. 1986. North American Polypores. Vol. 1. Fungi Flora. Oslo.

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.

US National Collections 11-18-02: <http://nt.ars-grin.gov/fungalatabases/databaseframe.cfm?CFID=225771&CFTOKEN=11762541>

OSU Fungal collections 11-18-02: <http://ocid.nacse.org/research/herbarium/myco/index.html>

Canadian Forest Service Pacific Forestry Center Herbarium 11-18-02:

http://www.pfc.cfs.nrcan.gc.ca/biodiversity/herbarium/searchbyfungus_e.html

Bondartsev. 1953 (1971 transl.). The Polyporaceae of the European USSR and Caucasia. Israel program for scientific translations.

Redhead & Norvell. 1993. Notes on Bondarzewia, Heterobasidion, and Pleurogala. Mycotaxon 48: 371-380.