

California Status Factors

Elcode NFSM000017
Gname BONDARZEWIA MESENERICA
Gcomname

Number of Occurrences

B = 6 - 20

Comments Current databases (ISMS, OSC, BPI and Castellano 1999, Norvell 1995) indicate that there have been at least 15 occurrences documented in California.

Number of Occurrences with Good Viability

C = Few (4-12) occurrences with good viability

Comments Five of the occurrences are protected in some fashion.

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

E = 5,000-20,000 km² (about 2,000-8,000 square miles)

Comments B mesenterica is found in the northern quarter of California in the coast and Cascade range forests. [ISMS maps, database 2002]

Area of Occupancy

B = 0.4-4 km² (about 100-1,000 acres)

C = 4-20 km² (about 1,000-5,000 acres)

LB = 4-40 km (about 2.5-25 miles)

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

Comments Three sites occurred close together within the Shasta-Trinity National Forest, 1 in the Klamath National Forest, 1 in the Six Rivers National Forest, and one within Redwood National Park.

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

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 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

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

Comments Of the six occurrences cited for California, 1 site is not protected, 1 site lies Redwood National Park, 2 lie in late-successional reserves, and possibly 1 within riparian reserves. If late-successional and riparian reserves are not permanently protected, the ranking above would change to (B).

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 & Ryvarden 1986, Redhead & Norvell 1993). As such it requires late-successional or old-growth host trees in order to fruit.

Other Considerations

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. There are relatively few occurrences of the species in California.

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

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Reasons

Since surveys have been instituted in the northern spotted region, the species remains elusive in California

where it is found in 1 permanently protected areas, 2 late-successional reserves, and possible 1 riparian reserves. Its fruitbody is large and showy, facilitating its find in surveys, which would indicate its relative rarity in the state.

BCD Sources

New Sources

Gilbertson & Ryvarden. 1986. North American Polypores. Vol. 1. Fungi Flora. Oslo. 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 in the Regional Mycology Lab, Corvallis, Oregon. ALSO US National Collections 11-18-02: <http://nt.ars-grin.gov/fungaldatabases/databaseframe.cfm?CFID=225771&CFTOKEN=11762541> ALSO OSU Fungal collections 11-18-02: <http://ocid.nacse.org/research/herbarium/myco/index.html> ALSO Canadian Forest Service Pacific Forestry Center Herbarium 11-18-02: http://www.pfc.cfs.nrcan.gc.ca/biodiversity/herbarium/searchbyfungus_e.html ALSO Bondartsev. 1953 (1971 transl.). The Polyporaceae of the European USSR and Caucasia. Israel program for scientific translations. ALSO Redhead & Norvell. 1993. Notes on Bondarzewia, Heterobasidion, and Pleurogala. Mycotaxon 48: 371-380.