

## Heritage Rank Status Factors

**Elcode** NFSM000132  
**Gname** PHOLIOTA ALBIVELATA  
**Gcomname**

### Number of Occurrences

C = 21- 80

**Comments** Endemic to the northern spotted owl region of the US, there are at least 41 occurrences represented by 57 collections of this species in Washington, Oregon, and California (Norvell 2002 pers comm., Norvell & Redhead 2000, Norvell & Exeter 2003, Castellano et al. 1999, ISMS-ONH 2002). Castellano et al. 1999 note that of the 52 collections cited there, "most sites have scant information that does not allow specific land allocation to be determined" and thus mapped. Continued fungal surveys using additional information provided in Norvell & Redhead 2000 should uncover additional sites (Norvell 2002 pers comm).

### Number of Occurrences with Good Viability

U = Unknown what number of occurrences with good viability

**Comments** There is no information available on the number of extant occurrences of this species within the northern spotted owl region, although at least the three most recent occurrences known to the ranking author (Norvell 11-26-02) and 8 historical sites occurring in protected areas are assumed to be extant. Most of the other collections were made prior to 1968 on lands that may not still retain the original habitats.

### Population Size

U = Unknown

**Comments** Records reflect only species occurrence, i.e. fruitbodies, not numbers of individuals. Fungal genets cannot be delimited without DNA sampling.

### Range Extent

F = 20,000-200,000 km<sup>2</sup> (about 8,000-80,000 square miles)

**Comments** An endemic restricted to the northern spotted owl region in western North America, in the United States, this species ranges from the Canadian border and the coast to the western slope of the Cascade range south to Humboldt and Trinity counties in California. (Castellano et al. 1999, Norvell & Redhead 2000, Norvell & Exeter 2003, ISMS Database 2002 and GIS map for *Pholiota albivelata*).

### 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. Saprophytic fungi have spotty distributions that are tied to the presence of appropriate substrates, which are unknown in this instance.

## 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** This species is saprophytic on coniferous debris and litter, usually in closed canopy mid-successional (Norvell & Exeter 2003, Smith & Hesler 1968, Castellano et al. 1999) or late-successional/old-growth conifer rainforests (Norvell & Redhead 2000, Norvell 2002 pers comm) in areas where appropriate weather and microclimate regimes are present. Removal or destruction of coniferous debris and underlying soil may imperil existing populations. This species appears to have a spotty distribution, but in all likelihood it has been mistaken for *Stropharia hornemannii* in the field and not collected. Longevity of individuals and populations is unknown; individuals are assumed to reproduce through basidiospore dispersal and mycelial interactions with other individuals. It apparently depends upon a complex older forest (the site in the mid-successional stand had many components of a late-successional forest) and thus upon preservation of such habitats for survival over the long term. (Norvell 2002 pers comm).

## 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** This species is saprophytic on fallen coniferous debris and occurs within complex mid-successional to late-successional/old-growth coniferous rain-forests. Incidental catastrophic events and/or removal of the substrate may imperil known populations. The 8-9 known sites that lie within currently protected areas may no longer be extant. Current occurrences of this species are rare, but in view of the three recent discoveries in surveyed areas, the species is inferred to be relatively stable over the short-term (Norvell & Redhead 2000, Norvell & Exeter 2003, Norvell 2002 pers comm).

## 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** It occurs within complex mid-successional to late-successional/old-growth coniferous forests and has recently been confirmed from a 55-year old aerially seeded and interplanted Douglas-fir plantation. Whatever threatens the general habitat, microclimates, and/or substrate can imperil this species. All populations are at risk to incidental catastrophic events, such as hot fires, and unmonitored human interference. Unprotected occurrences are at risk from logging activities such as brush/debris clearing after thinning operations. Populations are thought to be at risk to clean- and possibly clear-cutting (Norvell pers comm 2002).

## Number of Appropriately Protected and Managed Occurrences

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

**Comments** 8-9 historical sites lie in protected areas. ISMS-ONH (2002) lists 7-8 protected sites: 4 in permanent protected reserves, 3 in late-successional reserves, and 1 either in riparian reserves or in the unprotected matrix. The opening of late-successional and/or riparian reserves to logging, road construction, or development, could decrease the protected & managed occurrences to 7. Norvell & Redhead (2000) reported a 5th occurrence within a permanently protected reserve at Opal Creek, Oregon. No site is managed specifically for this species at the present time.

## 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** Presumably vulnerable to removal coniferous litter and underlying soil and/or cutting and removal of all standing timber around the sites. The species has been confirmed at one site during two years, the second after an adjacent stand had been clear-cut. It would otherwise be considered vulnerable to alteration of microhabitats and microclimate regimes (stream diversion, road construction, development) and incidental catastrophic events (hot fires).

## Environmental Specificity

C = Moderate. Generalist or community with some key requirements scarce.

**Comments** It occurs in complex mid-successional and late-successional/old-growth coniferous rainforests on downed woody debris within the *Tsuga heterophylla*/*Pseudotsuga menziesii* zone. Its precise biological and ecological requirements are unknown. It fruits in late to mid-autumn, usually with or slightly later than the common *Stropharia ambigua*. Its occurrence is unpredictable and patchy. (Norvell 2002 pers comm).

## Other Considerations

NRANK - N3?. This species is listed in the Record of Decision and the Northwest Forest Plan as *Pholiota albivelata* Murrill, *Mycologia* 4: 260. Norvell & Redhead (2000), who demonstrated that it represents a *Stropharia* species in all except spore color, transferred the species to *Stropharia albivelata*. Kirk (2002 pers comm) has entered the species in the Index of Fungi as *Stropharia albivelata* (Murr.) Norvell & Redhead *Mycotaxon* 76: 316. Alteration of the connecting "i" to "o" is in accordance with the St Louis Code of International Botanical Nomenclature.

**Edition** 11/26/2002      **Edauthor** Lorelei L Norvell

**Grank** G3?      **Grank Date** 11/26/2002

## Reasons

This species is saprophytic on coniferous debris in coniferous rainforests in the coastal regions of Washington, Oregon, and California. It is endemic to the northern spotted owl region of North America, where it is regarded as rare. Approximately 41 occurrences have been reported, with only 3 occurrences known to be extant, all in Oregon where recent Northwest Forest Plan surveys have been regularly conducted. The 9 known sites that occur within currently protected areas may be thought to preserve the original habitat. The species unknown biology and patchy occurrence preclude estimation of population size, area of occupancy, and long-term trends. All populations are at risk to incidental catastrophic events such as wildfire and anything that removes or destroys the substrate and habitat. Continuation of fungal surveys by monitors who are looking for a *Stropharia* instead of a *Pholiota* may reveal additional known occurrences.

## BCD Sources

## New Sources

Norvell & Redhead. 2000. *Stropharia albivelata* and its basionym *Pholiota albivelata*. *Mycotaxon* 76: 315-320. ALSO Smith & Hesler. 1968. The North American species of *Pholiota*. NY: Hafner. ALSO Stuntz & Isaacs. 1962. Pacific Northwest fungi I. *Mycologia* 54: 272-298. ALSO Castellano et al. 1999. Handbook to Strategy 1 fungal species in the Northwest Forest Plan. USDA-FS PNWRS PNW-GTR-476. ALSO Norvell & Exeter. (2003 in edit). Ectomycorrhizal epigeous basidiomycete diversity in Oregon's coast montane *Pseudotsuga menziesii* forests. [New York Botanical Memoirs]. ALSO Kirk. 2002. (pers comm re nomenclatural rules and listing "Stropharia albivelata" as published in Norvell & Redhead 2002 as "Stropharia albivelata" in the Index of Fungi.)

ALSO ISMS-ONH. 2002. ISMS data; ONH protection extrapolations; GIS map for PHAL17.