

## Oregon Status Factors

**Elcode** NFSM000053  
**Gname** DERMOCYBE HUMBOLDTENSIS

### Gcomname

### Number of Occurrences

A = 1 - 5

**Comments** In Oregon there is 1 known occurrence of *Dermocybe humboldtensis*. Continued fungal surveys may uncover more sites. (Castellano 1999, ISMS 2002)

### Number of Occurrences with Good Viability

B = Very few (1-3) occurrences with good viability

**Comments** There is only one known occurrence of *Dermocybe humboldtensis* in Oregon.

### Population Size

U = Unknown

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

### Range Extent

A = <100 km<sup>2</sup> (less than about 40 square miles)

**Comments** In Oregon, *Dermocybe humboldtensis* is known only from the North Myrtle Creek region in Douglas County. (ISMS Database 2002 and GIS map for *Dermocybe humboldtensis*). Castellano et al's (1999) report of two collections in Douglas County are not contained within the ISMS 2002 data, and there are no records posted of *Dermocybe humboldtensis* collections within the OSU [OSC] and OSU-FSL herbaria. Norvell (1995) reviewed no Oregon collections.

### 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; it appears restricted to stable dunes in association with *Pinus* spp. (Ammirati & Smith 1977). *Dermocybe humboldtensis* has unknown biological and ecological requirements that determine how and when symbiotic associations are formed with partners. The area of the extant population is believed small. (Norvell 2002 pers comm). Dr Joe Ammirati of the University of Washington <cort@uwashington.edu> may be able to provide additional information.

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

U = Unknown. Long-term trend in population, range, area occupied, or number or condition of occurrences unknown

**Comments** Dermocybe humboldtensis is an ectomycorrhizal fungus dependent upon the health of its symbiotic partner (Pinus) and possible restriction to stable dunes. Individuals are less dependent upon spore dispersal than upon mycelial interactions with other individuals and their mycorrhizal partners. The long-term trend for the current population cannot be predicted (Norvell 2002 pers comm).

### 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** Dermocybe humboldtensis is an ectomycorrhizal fungus dependent upon the health of its symbiotic partner (inferred as Pinus). Natural catastrophes or human activities that imperil the health of pines or disrupt the sand dunes may compromise both tree and fungus. Current occurrences of Dermocybe humboldtensis are rare throughout its range. The sole Oregon population may or may not lie within a protected riparian reserve. (ISMS/ONH 2002 data).

### Threats

C = Substantial, non-imminent threat. Threat is moderate to severe but not imminent (> 10 years) for most of the population, occurrences, or area.

Scope	High	Severity	Moderate	Immediacy	Unknown
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**Comments** Dermocybe humboldtensis is restricted to the Pacific coast region where it is symbiotically associated with Pinus on stable dunes in California (habitat data for the Oregon population is not currently available). Whatever threatens the mycorrhizal partners or the dunes threatens Dermocybe humboldtensis: natural catastrophes (hot fires) and/or human interference with the natural habitat (e.g., road construction or other development, off-road vehicular traffic, and logging activities) (Norvell pers comm 2002).

### Number of Appropriately Protected and Managed Occurrences

A = None. No occurrences appropriately protected and managed

B = Few (1-3) occurrences appropriately protected and managed

**Comments** ISMS-ONH (2002) data note that the sole known Oregon occurrence falls either within a riparian reserve or in the matrix. If riparian reserves are opened to clearcutting, road construction, or other development, no known occurrences would be protected. It should also be noted that the riparian reserve may not be managed appropriately for the fungus at the present time.

### Intrinsic Vulnerability

A = Highly Vulnerable. Species is slow to mature, reproduces infrequently, and/or has low fecundity such that populations are very slow (> 20 years or 5 generations) to recover from decreases in abundance; or species has low dispersal capability such that extirpated populations are unlikely to become reestablished through natural recolonization (unaided by humans). Ecological community occurrences are highly susceptible to changes in composition and structure that rarely if ever are reversed through natural processes even over substantial time periods (> 100 years).

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** Ectomycorrhizal fungal health is linked to that of the symbiotic partner (here Pinus) and preservation of the habitat -- here inferred to be stable dunes. Dermocybe humboldtensis would be vulnerable to natural catastrophes and human disturbance of the habitats: e.g., drought, insect

infestations, hot fires, road construction, development, logging.

## Environmental Specificity

A = Very Narrow. Specialist or community with key requirements scarce.

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

**Comments** Dermocybe humboldtensis is described from stable dunes growing in association with Pinus and Vaccinium species. It occurs in complex habitats, but its precise biological and ecological requirements are unknown. Based on collections data, it has only been verified from two fairly localized areas in California and Oregon. (Ammirati & Smith 1977, Norvell 1995, Castellano et al. 1999, ISMS 2002 database).

## Other Considerations

ORNHIC - List 1. Dermocybe humboldtensis is now recognized under its basionym, Cortinarius humboldtensis Ammirati and Smith 1977. Mycotaxon 5(2):385. ISMS 2002 geographic coordinates do not match those submitted by Norvell 1995, suggesting that 3 new occurrences have been discovered since 1956-1981. Any new occurrences should be conveyed to Dr. Joe Ammirati at the University of Washington <cort@uwashington.edu>.

**Edition** 2/23/2002      **Edauthor** Lorelei L Norvell

**Grank** S1      **Grank Date** 2/23/2002

## Reasons

Only one known occurrence of Dermocybe humboldtensis is known from Oregon, in Douglas County, in or near a riparian reserve. Dermocybe humboldtensis is an ectomycorrhizal fungus associated symbiotically with pines on stable sand dunes. Given the dearth of collections (only 5 total are known as confirmed by this author), the area of occupancy is inferred to be small. The current population is presumed to be stable over the short-term but the long-term trend is unknown. It is at risk to natural catastrophes (hot fires) or unmonitored human interference; if within an unprotected area it would be imperiled by road construction, development, logging activities, off-road vehicular intrusion, and other such action. More occurrences may be found in continuing Survey & Manage fungal surveys.

## BCD Sources

## New Sources

Ammirati & Smith. 1977. Studies in the genus Cortinarius III. Mycotaxon 5(2): 385-397. ALSO Ammirati. 1998. Cortinarius cyanites. (unpublished report on file in the Regional Mycology lab, Corvallis.) ALSO Norvell . 1995. ROD: Strategy 1 Fungal Species Evaluation (30 gilled and non-gilled Basidiomycete Strategy 1 species). Unpubl. report on file at the Regional Mycology Lab in in Corvallis, Oregon. ALSO Castellano et al. 1999. Handbook to Strategy 1 Fungal Species in the Northwest Forest Plan. USDA-FS PNWRS PNW-GTR-476. ALSO ISMS 2002 database with GIS map for DEHU4.