

Heritage Rank Status Factors

Elcode NF00HYCA21
Gname HYGROPHORUS CAERULEUS
Gcomname

Number of Occurrences

B = 6 - 20

Comments This distinctive gilled mushroom is grayish blue to blue or cream-colored with blue tints. Contrary to the Handbook (Castellano et al. 1999) this species is not endemic to Oregon and Washington. It was described from Idaho (Miller 1984) and reported from California (Largent 1985). Within the range of the northern spotted owl three sites were reported by Castellano et al. (1999); on the OSC web site (OSC n.d.) the two Oregon sites are vouchered at OSC (n.d.) as are additional sites in Wasco Co., OR and Chelan Co., WA. The list of ISMS collections includes five collections, one of which is "Known Sites Data", one is the Chelan Co. collection, one is from Jefferson Co., OR while two collections are from the Winema National Forest, OR. The grand tally is roughly 9 distinct sites.

Number of Occurrences with Good Viability

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

Comments Miller (1984) reported 9 collections over a period of three years from the type locality in Idaho. That population at least was, if not still is, a viable population. No similar data seems to be available on the collections from other states.

Population Size

U = Unknown

Comments This can not be determined; records reflect only species presence.

Range Extent

F = 20,000-200,000 km² (about 8,000-80,000 square miles)

Comments The extremes of the reported range are Chelan Co., WA, ; Mount Shasta , CA; Valley Co., ID; and the Chemult Ranger District in Oregon.

Area of Occupancy

U = Unknown

LU = Unknown

Comments Short of using molecular tools there is no way to evaluate occupancy.

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 too little data to draw any conclusions

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

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

Comments too little data to draw any conclusions

Threats

B = Moderate and imminent threat. Threat is moderate to severe and imminent for a significant proportion (20-60%) of the population, occurrences, or area. Ecological community occurrences are directly impacted over a moderate area, either causing irreversible damage or requiring a long-term recovery.

Scope Moderate **Severity** Moderate **Immediacy** Moderate

Comments Most, if not all, the sites are in areas where wildfires are frequent on a historical basis. This mushroom is likely mycorrhizal with conifers. Thus changes brought about by logging, mining, fires, and development (the latter a concern in Idaho especially) that results in the loss of trees and changes in the sites also threaten the existence of the species.

Number of Appropriately Protected and Managed Occurrences

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

Comments No information was presented on the Mt. Shasta (historic?) site. Of the three Oregon sites in the ISMS data, all are listed in as being in LSRs and are protected at least for the present. In Washington one site is in a LSR and not protected, the other is not protected. Bottom line: currently only 3 sites appear to be protected at the present but the future of this type of protection is in doubt.

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 degree of vulnerability under current forest practices is relatively low. However, this species occurs in areas that could undergo drastic changes due to logging and development with changes in land management policies at the Federal level,

Environmental Specificity

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

Comments This species fruits in the spring (May to July depending on altitude) and has been found near meltings snowbanks as well as in areas where the snow has been gone for several weeks but the ground is still moist.

Other Considerations

NRANK - N2N3. It is relatively easy to find and identify in the field so the paucity of sites is likely a reflection of true scarcity.

Edition 11/17/2002 **Edauthor** Nancy S. Weber

Grank G2G3 **Grank Date** 11/26/2002

Greasons

Fruiting bodies of this species are relatively easy to find and identify in the field when they are present. The paucity of sites is likely a reflection of true scarcity. *Hygrophorus caeruleus* is known only from western North America where it occurs in mountainous regions roughly in an arc around the northern part of the Great Basin, an unusual distribution for a fungus. It is known from about 9 sites. The sites in the range of the northern spotted owl are mostly in relatively dry, fire prone habitats and generally have produced only a few fruiting bodies. On the basis of the number of known occurrences, this species qualifies as a G2 species, on the basis of the size of its range, it may be a G3 species.

BCD Sources

New Sources

1999. Castellano, M.A., Smith, J.A., O'Dell, T., Cazares, E., and Nugent, S. 1999. Handbook to Strategy 1 Fungal Species in the Northwest Forest Plan. Portland, Oregon: USDA Forest Service, PNWRS PNW-GTR-476.

Largent, D.L. 1985. The Agaricales (Gilled Fungi) of California. 5. Hygrophoraceae. Eureka: Mad River Press, Inc. 208 pp.

Miller, O.K., Jr. 1984. A new Species of *Hygrophorus* from North America. *Mycologia* 76: 816-820. Note that Castellano et al. (1999) erroneously cite the title of this publication as "A new Species of *Hygrophorus* from North America".

OSC n.d. Mycological Collections Oregon State University. Retrieved 2002.11. from <http://ocid.nacse.org/research/herbarium/myco/index.html>.