

## Heritage Rank Status Factors

**Elcode** NFSM000025  
**Gname** CHRYSOMPHALINA GROSSULA

**Gcomname**

### Number of Occurrences

U = Unknown

**Comments** The number of occurrences worldwide is not known. In the northern spotted owl region in North America, there are 14 occurrences represented by ~47 collections of *Chrysomphalina grossula* in California, Oregon, and Washington. Continued fungal surveys may uncover more sites. (Norvell et al 1994, Norvell 1998, ISMS-ONH 2002)

### Number of Occurrences with Good Viability

U = Unknown what number of occurrences with good viability

**Comments** Number of viable occurrences cannot be predicted for this saprophyte, which is dependent upon a rapidly decomposed substrate, which is rapidly decomposed. Observation of a population on site in Oregon over a 5 year period showed that as the substrate bark chips decomposed and dispersed, the population spread. Once the barkchips were no longer replaced, the population disappeared, with the last fruitbody seen in 1998. (Norvell 2002 pers comm.)

### 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

H = > 2,500,000 km<sup>2</sup> (greater than 1,000,000 square miles)

**Comments** Known from Europe, Russia, Japan, and North America; within the northern spotted owl region in western United States, *Chrysomphalina grossula* ranges from the Olympic Peninsula in Washington south to Arcata, California and east to Mt Baker and south along the western Cascade region to Lane County. In that region, *Chrysomphalina grossula* appears restricted to the *Tsuga heterophylla*/*Pseudotsuga menziesii* zone (Norvell et al 1994; Norvell 1998; ISMS 2002 GIS map for *Chrysomphalina grossula*).

### 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. On-site observation of one Oregon community over a five year period noted a spotty occupancy at climax covering a ~1200m<sup>2</sup> area. The spotty distribution is linked to the presence of appropriate substrates. (Norvell et al 1994; Norvell pers comm 2002)

## 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** *Chrysomphalina grossula* is a saprophytic fungus dependent upon appropriate weather and microclimate regimes and the presence of suitable substrate (water-soaked coniferous wood). Removal or destruction of its substrate may imperil the fungus. It has a spotty distribution, with most occurrences found in mixed or coniferous forests or parks. In the northern spotted region of the US, *Chrysomphalina grossula* occurrences are rare in wild habitats but occasionally found in gardens or verges covered with imported wood mulch. Individuals reproduce through spore dispersal and mycelial interactions for reproduction. Longevity of individuals and populations is assumed to depend upon the presence of appropriate substrate. The complexity of biological requirements and wide distribution preclude estimating a long-term trend for *Chrysomphalina grossula* (Norvell 2002 pers comm).

## 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** *Chrysomphalina grossula* is a saprophyte dependent upon the presence of water soaked coniferous wood. It appears sporadically in mixed/coniferous forests and park-like settings. Incidental catastrophic events and/or removal of the substrate and/or replacement substrate coniferous sources can extirpate the fungus. Estimation of short-term trends for the entire worldwide range or for the populations documented from the northern spotted owl area in CA, OR, and WA cannot be made. (Norvell 2002 pers comm.).

## Threats

U = Unknown. The available information is not sufficient to assign degree of threat as above. (Severity, scope, and immediacy are all unknown, or mostly [two of three] unknown or not assessed [null].)

Scope	Unknown	Severity	Unknown	Immediacy	Unknown
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**Comments** *Chrysomphalina grossula* has been found sporadically in mixed/coniferous forests on watersoaked coniferous woods. Whatever threatens the general habitat, microclimates, and/or substrate can imperil *Chrysomphalina grossula*. 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 clearing or removal of coniferous coarse woody debris and current populations (Norvell et al 1994; Norvell 1998, pers comm 2002). Threats on a worldwide scale cannot be estimated.

## Number of Appropriately Protected and Managed Occurrences

U = Unknown whether any occurrences are appropriately protected and managed

**Comments** The number of protected occurrences worldwide is not known. Within the northern spotted owl region in the US, ISMS (2002) cites ~9 occurrences in protected areas: 6 in permanent protected preserves and 3 from late-successional reserves. Except for the most recently collected site in 2002, none of those occurrences can safely be regarded as extant (see comments under population viability). None of the known sites are managed for the fungus at the current 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** *Chrysomphalina grossula* is particularly vulnerable to the decomposition, destruction, or removal of coniferous wood and chips or the conifers that supply the substrate for new generations. It is also vulnerable to alteration of microhabitats and microclimate regimes (stream diversion, road construction, development). Once established, a population may remain viable as long as the substrate is present and other unknown conditions met.

## Environmental Specificity

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

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

**Comments** *Chrysomphalina grossula* is preferentially restricted to coniferous wood substrates (Norvell et al 1994; Norvell 1998). Its precise biological and ecological requirements are unknown and its distribution unpredictable and spotty. It is rare in "wild" settings but can be locally abundant on imported wood mulch. Phenology is variable, and in Oregon one community was recorded during every month of the year, fruiting whenever sufficient moisture was present. (Norvell et al 1994; Norvell 1998). Requirements of the mycelium are unknown.

## Other Considerations

Synonyms for *Chrysomphalina grossula* include *Omphalina wynniae* and *O. abiegna*. The brightly colored greenish-yellow fruitbodies are unusually long-lived for small mushrooms and have been observed to endure well over 1 month in one perennially observed community. (Norvell et al. 1994; Norvell 2002 pers comm. The species should be regarded as rare everywhere, although under the right conditions and with refurbishment of substrate it can persist in one location in abundance for a number of years.

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## Reasons

*Chrysomphalina grossula* has a northern temperate distribution and occurs in Europe, Russia, Japan, and North America, including the northern spotted owl region of CA, OR, WA. It is regarded as rare to infrequent everywhere. Within the spotted owl region only 14 occurrences have been documented; perhaps only one can be definitely regarded as extant. Its dependence on a supply of well soaked coniferous substrates and other unknown biological requirements preclude estimation of short- and long-term trends. All populations are at risk to incidental catastrophic events such as wildfire and anything that removes or destroys the substrate or replacement conifer hosts.

## BCD Sources

## New Sources

Norvell, Redhead, Ammirati. 1994. *Omphalina sensu lato* in North America 1 & 2. *Mycotaxon* 50: 379-407.  
ALSO Norvell. 1998. ROD: Strategy 3 Fungal Species Evaluation (11 gilled Basidiomycete Strategy 3 species). Unpubl. report on file at the Regional Mycology Lab, Corvallis, Oregon. ALSO ISMS-ONH. 2002. ISMS data; ONH protection extrapolations; GIS map for CHGR23.