

## Washington Status Factors

**Elcode** NFSM000177  
**Gname** RUSSULA MUSTELINA  
**Gcomname**

### Number of Occurrences

A = 1 - 5

**Comments** One Washington collection, based on a single specimen collection, was reported in Grund (1965) from the Stevens Pass area. It has not been collected since. No occurrences are included in the ISMS 2002 database. The microdrawings are somewhat at variance from those depicted in Romagnesi (1967) and Sarnari (1998); no photograph is included, and Grund notes the presence of sphaerocysts in the context. It is possible that the specimen was misdetermined by Grund.

### Number of Occurrences with Good Viability

U = Unknown what number of occurrences with good viability

**Comments** The single specimen was collected over 35 years ago in conifer woods, on the east side of Stevens Pass at about 3000 feet. It is impossible to estimate the viability of the organism (or the forest) at this time.

### Population Size

U = Unknown

**Comments** Genets of ectomycorrhizal fungi cannot be delimited without DNA sampling.

### Range Extent

**Comments** Grund (1965) collected a single specimen over 35 years ago in conifer woods, on the east side of Stevens Pass at about 3000 feet. The range at this time appears to be a point.

### Area of Occupancy

**Comments** Can only extrapolate area occupancy from fruitbodies as underground vegetative organism may produce many fruitbodies over a larger area. This species has unknown biological and ecological requirements that determine how and when ectomycorrhizal associations are formed with *Abies* spp. mycorrhizal partners. Assume a maximum of 100 acres per known occurrence. The single specimen MIGHT be thought to have been produced by a 100 acre vegetative mycelium (if still extant), but given the geology of the area, that is highly unlikely.

### 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** Only one specimen has been reported for Washington.

## 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** Only one specimen has been reported for Washington.

## 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

**Comments** Only one specimen has been reported from Washington, and no occurrences are included in the 2002 ISMS database.

## Number of Appropriately Protected and Managed Occurrences

A = None. No occurrences appropriately protected and managed

**Comments** Only one specimen has been reported for Washington in unprotected forest; no occurrences are reported in the ISMS 2002 database.

## 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 health of any mycorrhizal species is tied to the health of its symbiotic partner, in this case believed to be *Abies*. Thus any activity or natural occurrence that threatens the health of the tree or forest will threaten the fungus. Jankovsky (2002) suggests that pollution has had a negative impact upon ectomycorrhizal fungi in general and notes that pollution controls and other factor may have contributed to the reappearance of the species in Czech Republic forests.

## Environmental Specificity

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

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

**Comments** Precise biological requirements are not known; the species exhibits a preference for high elevation conifer forests, where it may be common, according to Sarnari (1998), Thiers (1997), and Romagnesi (1967).

## Other Considerations

There is some doubt as to the correct determination of the single specimen cited by Grund (1965). No occurrences have been included in the ISMS database, and it is not known whether the occurrence is still viable.

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

**Grank** SU      **Grank Date** 11/18/2002

## Reasons

Given the doubt as to the single specimen's identity, it would seem best to treat the species as a historical

report. The lack of present verification, despite the attempt by Ben Woo, a *Russula* specialist, to locate *R. mustelina* in Washington, would indicate that the species does not exist there. Both Mr Woo and Dr Joe Ammirati at the University of Washington should be contacted to ascertain whether they believe the species to occur in Washington at this time.

## **BCD Sources**

## **New Sources**

Thiers. 1997. Agaricales of California: Russulaceae: *Russula*. Mad River Press.

Grund. 1965. A survey of the genus *Russula* occurring in Washington state. University of Washington PhD dissertation.

Sarnari. 1998. Monografia illustrata del Genere *Russula* in Europa. Tomo Primo. [in Italian].

Romagnesi. 1967. Les Russules d'Europe et d'Afrique du nord. [in French].

Mycena News (11-18-02) <http://www.mssf.org/mnews/9911mn.pdf>

Jankovsky and others 2002. *Journal of Forest Science* 48, 2002 (2): 70-79.

Finnish Red List (11-18-02): <http://www.vyh.fi/eng/environ/naturcon/threat/2000/plant/agarics.htm>