California Status Factors

Elcode NFSM000177

Gname RUSSULA MUSTELINA

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Number of Occurrences

Comments One collection from California is cited in Thiers (1997) and one in Grund (1965); Thiers indicates that the species is widely distributed in the Sierra Nevada and common in the Yuba Pass and Mount Shasta areas. An unconfirmed 1999 report from a foray is noted in Mycena News (1999), but the origin of the collection is not given. No occurrences are cited in the 2002 ISMS database.

Number of Occurrences with Good Viability

Comments One collection from California cited in Thiers (1997), who notes that the species is "common" in some areas. At least one occurrence is presumed to be viable and there are probably many more, if the species has been accurately identified. Not occurrences are cited in the 2002 ISMS database.

Population Size

U = Unknown

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

Range Extent

D = 1,000-5,000 km2 (about 400-2,000 square miles)
E = 5,000-20,000 km2 (about 2,000-8,000 square miles)

Comments Thiers (1997) listed the species from California as widely distributed in the Sierra Nevada, and common in the Yuba Pass and Mt Shasta areas.

Area of Occupancy

U = Unknown

LU = Unknown

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. One collection cited in Thiers (1997) and another unverified report from California cited in the Mycena News (1999) provide little basis for extrapolation.

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

Comments One collection from California is cited in Thiers (1997) followed by an unconfirmed report in Mycena News (1999, by the Mycological Society of San Francisco). No occurrences are included in the ISMS 2002 database.

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

Comments No searchable databases cite Californian collections of the species which is treated only by Thiers (1997). No occurrences are included in the ISMS 2002 database.

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 Despite the observation that the species is common in certain areas of California, and the citation of the collection number housed in the San Francisco State University fungal herbarium, the location of any R. mustelina populations is not known at this time. No occurrences are reported in the ISMS 2002 database. Threats would include hot fires, development, or heavy logging of the forested areas containing the occurrences.

Number of Appropriately Protected and Managed Occurrences

A = None. No occurrences appropriately protected and managed

Comments No occurrences are reported in the ISMS 2002 database. One historical collection is noted in Thiers 1997, who also reports the species as common in certain areas of California. It is not known whether any of the occurrences are in protected and managed reserves.

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

Additional research is needed, including contacting Dr Dennis Desjardin, curator of the Thiers Memorial Herbarium at San Francisco State University to verify California sites. The species was said to be common in certain areas in California.

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

Grank S2S4 **Grank Date** 11/18/2002

Greasons

Thiers (1997) reported the species from California as "widely distributed in the Sierra Nevada, common in the Yuba Pass area and in the Mt Shasta area." A collection from the area was noted in Mycena News in 1999. The fact that no collections have yet been confirmed in the ISMS 2002 database is problematic.

BCD Sources

New Sources

Thiers. 1997. Agaricales of California: Russulaceae: Russula. Mad River Press. ALSO Grund. 1965. ALSO A survey of the genus Russula occurring in Washington state. University of Washington PhD dissertation. ALSO Sarnari. 1998. Monografia illustrata del Genere Russula in Europa. Tomo Primo. [in Italian]. ALSO Romagnesi. 1967. Les Russules d'Europe et d'Afrique du nord. [in French]. ALSO Mycena News (11-18-02) http://www.mssf.org/ mnews/9911mn.pdf ALSO Jankovsky and others 2002. Journal of Forest Science 48, 2002 (2): 70-79. ALSO Finnish Red List (11-18-02): http://www.vyh.fi/eng/environ/naturcon/threat/2000/plant/agarics.htm