

California Status Factors

Elcode PDVIS030FX
Gname ARCEUTHOBIUM TSUGENSE MERTENSIANA
Gcomname mountain hemlock dwarf mistletoe

Number of Occurrences

D = 81 - 300

Comments It is estimated that there are at least 81 occurrences for this taxon. In general, dwarf mistletoe may be undercollected.

Number of Occurrences with Good Viability

U = Unknown what number of occurrences with good viability

Comments Unknown

Population Size

G = 100,000-1,000,000 individuals

H = >1,000,000 individuals

Comments If one assumes that each infected branch is an individual, then the total range-wide numbers could be quite large.

Range Extent

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

Comments This taxon is known from the Cascade Mountains in northern California to the central Sierra Nevadas in Alpine County, California. Most of the population is known from the Cascade Mountains, in Oregon to central California.

Area of Occupancy

U = Unknown

LU = Unknown

Comments Unknown

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 Unknown

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 Unknown

Threats

G = Slightly threatened. Threats, while recognizable, are of low severity, or affecting only a small portion of the population, occurrences, or area. Ecological community occurrences may be altered in minor parts of range or degree of alteration falls within the natural variation of the type.

Scope Low Severity Low Immediacy Low

Comments Threats to this taxon are associated with threats on its host, mountain hemlock. Depending on the post-cut timber management, logging may increase infections to the remaining trees (Carpenter et al. 1979).

Number of Appropriately Protected and Managed Occurrences

D = Many (13-40) occurrences appropriately protected and managed

Comments Mountain hemlock is found at higher elevations, where there are less timber harvest activities and where many of the protected areas have been established.

Intrinsic Vulnerability

C = Not Intrinsically Vulnerable. Species matures quickly, reproduces frequently, and/or has high fecundity such that populations recover quickly (< 5 years or 2 generations) from decreases in abundance; or species has high dispersal capability such that extirpated populations soon become reestablished through natural recolonization (unaided by humans). Ecological community occurrences are resilient or resistant to irreversible changes in composition and structure and quickly recover (within 10 years).

Comments In one study, although based on western hemlock dwarf mistletoe, a single tree contained 4318 live branch infections between 2 and 10 meters above ground and about 73,000 fruits were produced in 1 year (Carpenter et al. 1979).

Environmental Specificity

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

Comments This taxon is parasitic primarily on *Tsuga mertensiana*, *Abies amabilis*, *A. lasiocarpa* var. *lasiocarpa*, and *A. procera*. *Pinus albicaulis* is a secondary host and *Pinus monticola* is an occasional host. *Picea breweriana*, *Abies grandis*, *Pinus contorta* var. *latifolia* and *Tsuga heterophylla* are rare hosts (Hawksworth 1996). Tree age at time of infection has been reported from 4 to 11 years as compared to other dwarf mistletoe infections starting at less than 5 years old (Shaw 1982).

Other Considerations

Edition 11/20/2002 Edauthor Vrilakas, Sue

Grank S3S4 Grank Date 11/20/2002

Reasons

This taxon is not well collected and not well surveyed. It is estimated that there are between 21 to 100 occurrences within the state.

BCD Sources

New Sources

- Carpenter, L.R., E.E. Nelson, J.L. Stewart. 1979. Development of dwarf mistletoe infections on western hemlock in coastal Oregon. *Forest Science* 25(1): 237-243.
- Hawksworth, Frank G. and Delbert Wiens. 1996. Dwarf mistletoes: biology, pathology, and systematics. *Agriculture Handbook* 709. USDA Forest Service, Washington, DC. 410 pp.
- Shaw, C.G. 1982. Mountain hemlock is occasional host for hemlock dwarf mistletoe in Alaska. *Plant Disease* 66(9): 852-853.