

Heritage Rank 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 are inconspicuous and may be undercollected.

Number of Occurrences with Good Viability

U = Unknown what number of occurrences with good viability

Comments

Population Size

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

H = >1,000,000 individuals

Comments If one assumes that each infected branch represents an individual mistletoe plant, 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)

G = 200,000-2,500,000 km² (about 80,000-1,000,000 square miles)

Comments This taxon ranges from southern British Columbia southward to western Washington and Oregon, 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 Intrinsicly 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 on conifers, occurring 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

NRANK - N3N4

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Reasons

This subspecies (ssp. *mertensiana*) is rarer than the more common western hemlock dwarf mistletoe. This taxon has an estimated minimum of 80 occurrences with a fairly wide distribution and no major threats. The species (*Arceuthobium tsugense*), considered collectively, is considered widespread, abundant, and secure.

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.