

Heritage Rank Status Factors

Elcode NLLEC5P420
Gname USNEA LONGISSIMA

Gcomname

Number of Occurrences

E = >300

Comments

Number of Occurrences with Good Viability

U = Unknown what number of occurrences with good viability

Comments In Norway, several (approximately 11) occurrences are within nature reserves although those in Sogn og Fjordane are only temporarily protected. None of the largest U. longissima populations are protected in Norway.

Population Size

H = >1,000,000 individuals

Comments It is infrequently encountered within even suitable habitat, but is often locally abundant at the sites where it does occur. Population size is difficult to assess: one whole tree may be covered by one individual. On the other hand, every fragment could give rise to a large thallus.

Range Extent

H = > 2,500,000 km² (greater than 1,000,000 square miles)

Comments Usnea longissima is restricted to boreal coniferous regions where it has an incompletely circumpolar distribution, with occurrences in Europe, Asia, and North America (Motyka 1936-38, Ahti 1977a). It has been collected from mountains in China, India, Canada (British Columbia), Europe (Scandinavia and Spain) and the USA (Alaska, far north western, and New England states). The distribution was previously considered to be continental (Ahlner 1948, Gams 1961), from oceanic parts of Norway (Jorgensen & Ovstedal 1975, Gauslaa et al. 1992), and in the USA the species appears to more common near coasts (Ahti 1977a, Esseen et al. 1981). It has been reported from slopes above 3200m in the Hengduan Mountains, above 3800m in the greater Liangshan Mountains in southwestern Sichuan province, and also above 2200m at the western edge of the Sichuan basin, China. It has also been collected from the Simla Mountains of India. In the USA the range is disjunct and includes Alaska to California and west of the Cascade Range crest (www.fs.fed.us) and the New England states, Massachusetts, Maine, New Hampshire and Vermont (members.aol.com; see web citations). The distribution in Scandinavia was mapped by Ahlner (1948) and updated distribution data are given by Esseen & Ericson (1982), Esseen (1991), and Andersson & Williamson (1993).

Area of Occupancy

H = >20,000 km² (greater than 5,000,000 acres)

LH = >200,000 km (greater than 125,000 miles)

Comments

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

C = Substantial Decline (decline of 50-75%)

Comments Extinct across much of Europe due to air pollution. The abundance and range of *U. longissima* is clearly declining. Populations of *U. longissima* were reported to be declining by 1914 in the Americas (Howe, 1914), by 1931 in Scandinavia (Ahlner, 1931), and by 1911 by Lettau for other parts of Europe. The species is now extinct or threatened in many European countries, e.g. Austria, Germany, and Switzerland (Bibinger 1970, Esseen et al. 1981, Esseen & Ericson 1982, Ruoss & Clerc 1987, Scholler, 1997, Wirth 1976, 1987). It was listed as extinct from the EU (Serusiaux 1989), but recent collections have been reported from Italy (Obermayer 1996). *U. longissima* was reported in Slovenia (www-ang.Kfunigraz.ac.at), but this could not be confirmed in 1996 and it was concluded that *U. longissima* may be extirpated (Meyerhof et al, 1996). Although Norway has the largest and most vital populations in Europe (Gaarder et al. 1991; Tonsberg et al. 1996; www.toyen.uio.no), *U. longissima* has been extirpated from much of Scandinavia. For example, of the 67 localities reported in southeast Norway between 1950-1951, *U. longissima* was not found in any of them during a resurvey project in 1988. However, 7 new localities were found at this time. It is currently considered threatened in parts of Norway (Olsen and Gauslaa, 1991).

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

D = Declining. Decline of 10-30% in population, range, area occupied, and/or number or condition of occurrences

Comments

Threats

A = Substantial, imminent threat. Threat is moderate to severe and imminent for most (> 60%) of the population, occurrences, or area. Ecological community occurrences are directly impacted over a widespread area, either causing irreversible damage or requiring long term recovery

Scope High Severity Moderate Immediacy Moderate

Comments *U. longissima* is impacted by habitat loss, air pollution, and commercial harvesting. It is extremely sensitive to air pollution (Insarova et al. 1992) and specific habitat demands and low dispersal ability make *U. longissima* very sensitive to environmental disturbances (Esseen 1981). The range of *U. longissima* is clearly declining as it has been extirpated from much of its range (e.g., most of Europe and many parts of Scandinavia). Although the U.S. Pacific Northwest remains a relative stronghold for the species, *U. longissima* faces increasing pressure in the region from several factors common to all parts of its range, i.e. forestry (Haugan-Reidaret et al., 1994), air pollution, and land development (www.toyen.uio.no; see web citations).
On CA red list.

Number of Appropriately Protected and Managed Occurrences

B = Few (1-3) occurrences appropriately protected and managed

C = Several (4-12) occurrences appropriately protected and managed

Comments In Norway several (approximately 11) occurrences are within nature reserves, although those in Sogn og Fjordane are only temporarily protected. None of the largest *U. longissima* populations are protected in Norway.

Intrinsic Vulnerability

A = Highly Vulnerable. Species is slow to mature, reproduces infrequently, and/or has low fecundity such that populations are very slow (> 20 years or 5 generations) to recover from decreases in abundance; or species has low dispersal capability such that extirpated populations are unlikely to become reestablished through natural recolonization (unaided by humans). Ecological community occurrences are highly susceptible to changes in

composition and structure that rarely if ever are reversed through natural processes even over substantial time periods (> 100 years).

Comments Usnea longissima is best developed in old-growth forests and will probably not persist in short-rotation second-growth forests. In Scandinavia it seems very predictable in old growth stands (> 80 years) but is absent from young forests and does not appear to survive clear-cutting (Rolstad-Erlend and Rolstad-Jorund, 1996). It is concluded that old forests with ample diffuse light at lower and more humid canopy levels are likely essential for this species (Gauslaa, 1997). Dispersal is slow, by means of fragmentation. It is highly sensitive to air pollution.

Environmental Specificity

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

Comments Habitat is very near to year-round water or in fog zones.

Other Considerations

NRANK - N3. Roxanne Bittman recommended G3? (4/00). G2 recommended by Juanita Ladyman; EGR author. G3 recommended by Larry Morse. G3G4 recommended by Daphne Stone (Dec. 2002).

Edition 2/20/2003 **Edauthor** Juanita A. R. Ladyman, Ph.D.; rev. Larry Morse (2001), rev. D. Stone (2002)

Grank G3G4 **Grank Date** 11/30/2002

Reasons

Usnea longissima occurs in mountain ranges on three continents. However, although U. longissima appears to have extensive range and frequent occurrence, it is commercially collected from the wild and its potential habitat is clearly continually declining. Its habitat in essentially all its range is threatened and documentation supports the idea that U. longissima has been extirpated from much of its historic range.

BCD Sources

New Sources

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