

Chamaecyparis lawsoniana in Europe: distribution, habitat, usage and threats

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The conifer Lawson cypress (*Chamaecyparis lawsoniana* (A. Murray) Parl.) is native to a small area in North America. Variable in form, there are over 200 cultivars selected for horticultural purposes. It has been planted in many countries in Europe, usually as an ornamental, although the timber is also of good quality. It has been severely affected in its native range by root rot disease, and this has now spread to the European population.

Chamaecyparis lawsoniana (A. Murray) Parl., known as Lawson cypress, or Port Orford cedar in the United States, is a large conifer native to North America. It belongs to the family Cupressaceae, and is sometimes referred to as a “false-cypress” to distinguish it from other cypresses in the family. It is long-lived (more than 600 years) and can reach heights of up to 50m (exceptionally up to 70m in its native range) and a diameter exceeding 2m^{1, 2}. The tree is narrowly columnar with slender, down-curving branches; frequently with forked stems. The bark is silvery-brown, becoming furrowed and very thick with age giving mature trees good fire resistance^{2, 3}. The wood is highly aromatic with a distinctive ginger-like odour, as is the foliage which has a parsley-like scent when crushed^{3, 4}. The evergreen scale-like leaves are around 2-3mm long⁵. Abundant, round pea-sized cones ripen in autumn with seed dispersal occurring immediately after and continuing until the following spring⁶.

Distribution

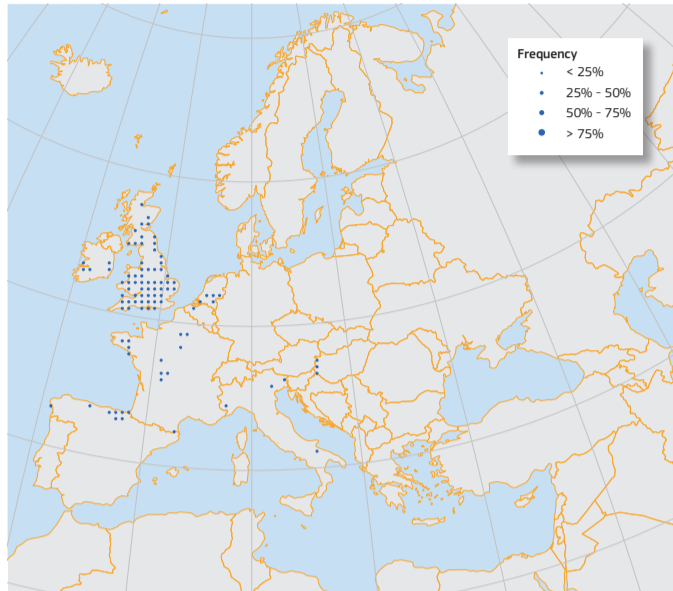
The native range of Lawson cypress is a narrow strip between Oregon and north-west California, mainly near the coast. It was introduced into Europe in 1854 and named after the Scottish nursery (Lawson & Son) where it was first sent⁷. It is now established, though not common, in Germany, France, the Netherlands, Denmark and United Kingdom, and also outside Europe in Australia, South Africa, Kenya, New Zealand and Sri Lanka¹. Other species of *Chamaecyparis* are present in Europe. In particular, Hinoki cypress (*Chamaecyparis obtusa*) and Sawara cypress (*Chamaecyparis pisifera*) are the most frequent ones after Lawson cypress⁸⁻¹⁰.

Habitat and Ecology

Lawson cypress prefers medium-textured soils with consistent summer moisture, but it can also grow in drier conditions. It is relatively shade-tolerant and can cope with a wide range of conditions and soil types. It is able to grow either under a forest canopy or as a pioneer in the open. Growth rate is relatively slow for young trees, but older trees retain their ability to respond to more light and space and can become dominant in old-growth forests. It is usually found in mixed coniferous forests (fir, spruce, pine), or with broadleaved species such as oak¹¹. It is an interesting species ecologically as its natural range is extremely small, yet it is able to survive in a wide variety of conditions^{4, 12}.



Map 1: Plot distribution and simplified chorology map for *Chamaecyparis lawsoniana*. Frequency of *Chamaecyparis lawsoniana* occurrences within the field observations as reported by the National Forest Inventories.



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Importance and Usage

The main use for Lawson cypress outside its natural range is as an ornamental tree, and there are over 200 cultivars with different coloured foliage and forms^{1, 12}. The timber is also valuable as it has many good qualities: fine texture, straight grain, easy to work and resistant to decay, it is suitable for a wide range of applications including general construction, railway sleepers, doors, toys, and in the past, arrow shafts and venetian blind slats¹². Only lack of availability has prevented it being used more widely commercially¹². *Chamaecyparis* mature stands may offer a good protection from soil erosion and their root systems may mitigate shallow-landslide susceptibility¹³⁻¹⁵.

Threats and Diseases

Lawson cypress is highly susceptible to the oomycete *Phytophthora lateralis* that has spread throughout much of its range, causing heavy losses since first being described in 1923¹. The pathogen causes root rot and can quickly kill trees of all ages. This has resulted in Lawson cypress now being classed as “near threatened” in the United States. The pathogen has more recently been observed in Europe where it now poses an increasing threat^{16, 17}.



Ornamental specimen in a park in Varese (North Italy). (Copyright Achille Mauri: CC-BY)



Lawson's Cypress killed by *Phytophthora lateralis* (Roseburg, Oregon). (Copyright US Forest Service, commons.wikimedia.org: PD)

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