Patagonian Cypress

Fitzroya cupressoides

Other Names: Pinus cupressoides (synonym), Alerce, Lahuán
Family: Cupressaceae
Natural Range: Argentina (Chubut, Neuquén, Rio Negro), Chile (Los Lagos)

IUCN Conservation Status

Endangered (EN)

A tree so imposing and iconic, it was declared as a national monument i Chile, the Patagonian cypress is the only species of its genus. A genus initially named by Hooker, in honour of the Capitan of the HMS Beagle.

Fitzroya cupressoides (the Patagonian cypress), is the only species belonging to its genus (*Fitzroya)* which means it is evolutionarily distinct from other species in its Family. Endemic to Argentina and Chile, this species has a discontinuous distribution in the Coastal Cordillera (a mountain range that runs along the Pacific coast of South America), the Chilean Central Valley and the Andes.

The species is closely associated with the fire dependent forests of Chile and Argentina. The Patagonian cypress is often one of the first trees to colonise areas affected by volcanic activity which is why that, throughout its range *Fitzroya cupressoides* grows on poorly drained soils derived from volcanic ash. The species benefits from burning episodes, which it often follows with a period of high growth.

The bark is brownish red, deeply furrowed and fibrous. Throughout it's life, its leaves change shape. The leaves are initially arranged in alternating whirls which are long and flattened, but become ovate and scale-like as the trees mature. Seed production is highly variable; like other fire-dependent species in the region, the species seem to follow 'pulses' of production meaning trees can go through 5-7 year periods of low to no production and seed viability is often poor. It has been suggested that the suppression of forest fires may have contributed to poor species regeneration.

The Patagonian cypress is considered to be the largest tree species in South America, individuals have been reported to grow to 70 metres in height and up to 5 metres in trunk diameter. Because of its huge size, it has earned the nickname the ‘redwood of the south’. Similarly to it’s redwood cousins, it is also a very long lived, slow growing tree. In 1993, the oldest known Patagonian cypress found in Chile was estimated to be 3,622 years old. This means the seedling started to grow at the same time as Stone Henge was built in Great Britain (around 1500 B.C), making it the second oldest living tree species in the world, after the bristlecone pine.

Fitzroya cupressoides wood, which is elastic and light, is thought to have been used for at least the last 13,000 years. However, it has only been in the last 300 years or so that this species has suffered from over-exploitation due to its highly prized wood. Other threats include human-induced fires and the conversion of forest to pasture land. During the many decades of uncontrolled forest harvest in Chile, no other conifer species has been logged so extensively as the Patagonian cypress and it is now considered Chile’s most threatened conifer.

In 1973 this species was included under Appendix I of CITES affording it the highest degree of protection in international law and limiting trade. Three years later, in 1976 Chile declared the species as a National Monument. Despite national and international legal protection prohibiting the exploitation of live trees, logging has continued through the laundering of newly cut trees.

In Chile’s Central Valley, where it is believed the species was thought to be completely eliminated, ecological restoration has taken place using nursery grown seedlings of local provenances. The International Conifer Conservation Programme (ICCP) based at the Royal Botanic Garden Edinburgh was established in 1991 and aims to conserve conifers and associated species.The Patagonian Cypress has been a flagship species of ICCP since it was initiated. The ICCP has conducted molecular research to broaden the genetic basis of *Fitzroya cuppresoides* in cultivation, for use in conservation programmes. The species is also present in other botanical collections; according to the ‘Global Survey of Ex-situ Conifer Collections‘ the Patagonian cypress is reported to be held in 63 *ex-situ* collections worldwide.

Selected references:

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Lara, A., S. Fraver, J.C. Aravena, and A. Wolodarsky-Franke. 1999. Fire and the dynamics of Fitzroya cupressoides (alerce) forests of Chile's Cordillera Pelada. *Ecoscience* 6(1): 100-109.

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