

***Cedrus brevifolia* Pinaceae**
Cyprus cedar

Cypress cedar, *Cedrus brevifolia*, grows high up in the Troodos mountains on Cypress Island. Cypress Island is located at the northeastern extreme point of the Mediterranean between Asia, Europe and Africa. More than 125 endemic plants are found here including the endangered Cypress cedar.

This cedar grows on igneous formations and occurs in pure stands at higher elevation or in mixed stands with Turkish pine (*Pinus brutia*), golden oak (*Quercus alnifolia*) and Oriental plane (*Platanus orientalis*). Golden oak is also endemic to the igneous geological complex of the Troodos Mountains.

Cypress cedar is different from the other species of its genus. This medium sized tree has short needles. It grows slowly. It is resistant to aphids. It also has the highest tolerance to drought of all cedar species.



flat top of old growth *C. brevifolia*



the female cone - 2 years to mature

Cedrus is a genus with a disjunct distribution between those species around the Mediterranean Sea (cedar of Lebanon and blue Atlas cedar) and the western Himalayas (deodar cedar). A disjunct distribution is when two or more groups are related to each other but considerably separated geographically.

Endemic island species with a narrow distribution are often linked to low genetic variation within populations and a lack of differentiation among populations. *Cedrus brevifolia* is an endemic island tree species with its range being restricted to a single forest, divided into five neighbouring sites. Despite the general view on endemic species with a narrow distribution, Cypress cedar is both genetically diverse and genetically structured.

Cyprus cedar's origin, potential contact with mainland species, and population size may have been the most important components affecting the high genetic diversity observed. In addition, the mild eastern Mediterranean climate of the late glacial maximum (21,000 years ago) made it possible for mountainous conifers to conserve their high genetic diversity by maintaining large enough population sizes.

A recent molecular genetic study estimated the time of divergence between the cedar of Lebanon (*C. libani*) and Cyprus cedar (*C. brevifolia*) at 6.56 on the molecular clock (plus or

minus 1.20 million years ago). The 'molecular clock' terminology is the average rate at which a species' genome accumulates mutations and is used to measure their evolutionary divergence.

The presence of *Cedrus brevifolia* in Cyprus has been known to ancient authors. Theophrastus (371-287 BC), the father of botany, was the first to report the existence of Cyprus cedar on the island in his book 'Historia Plantarum'. He also reported that cedar wood from Cyprus was used for the war ship of Demetrios the Besieger.

Cypress Island ecoregion is home to a variety of flora and fauna. This island also serves as a stepping stone between Europe and Africa for millions of migratory birds every year with 10 species being endemic. The island is home to a number of mammals such as the Cyprus moufflon, which is a rare type of wild sheep found only on Cyprus Island.

Just eighteen percent of the island is covered by its original habitat. Conversion of forest to pastures, urban development, forest fires, and tourism are all causes of habitat loss and continue to be a threat to this ecoregion. These are the same threats we see everywhere in the world today. There is also a high potential of human impact, mainly due to the abrupt socio-political partition of the island in July 1974. About 100 km² of forests on the northern part of the island were burned during conflicts.

Now it is time to set aside endangered species, diverging genes and environmental threats. It is time for a legend. Cyprus cedar is linked with several legends in Cyprus since it is known as Holy Mary's pine. According to local tradition, when the picture of Virgin Mary (painted by the Apostle Luke) was transferred from Constantinople to Kykkos Monastery in the Troodos mountains, the pine trees knelt down as it was passing by. The Virgin Mary rewarded them by changing them into beautiful cedars. And that could just be the alternate molecular clock - a miracle.



2020 winter pictures of *Cedrus brevifolia* 'Treveron' - bed 58B at VanDusen planted in 1992
There is also one species tree, *Cedrus brevifolia* - bed 33 at VanDusen planted in 1973.

<https://botanyphoto.botanicalgarden.ubc.ca/2014/06/cedrus-brevifolia/>

<https://www.worldwildlife.org/ecoregions/pa1206>

<http://www.life-kedros.eu/Oikotopos9590EN.html>

https://en.m.wikipedia.org/wiki/Kykkos_Monastery

<https://link.springer.com/article/10.1007/s00606-011-0453-z>