Dendroecological analysis of a Fitzroya cupressoides and a Nothofagus nitida stand in the Cordillera Pelada, Chile

Devall, Margaret S.

Parresol, Bernard R.

Armesto, Juan J.

Lumbering of Fitzroya cupressoides in Chile began in 1599 and continued until 1976, when the species was declared a national monument and cutting of live trees was prohibited. Today, F. cupressoides is threatened; many of the remaining stands in the coastal range appear to be declining, with a predominance of standing dead stems and patchy, sparse regeneration. We performed tree-ring analysis on a F. cupressoides stand and a nearby Nothofagus nitida stand, in the Cordillera Pelada, of coastal Chile (40°S) in order to examine the ecological history of two stands in the montane forest. Our analysis demonstrates that the F. cupressoides stand has undergone several periods of growth release and disturbance; the last 34 years of the chronology show a trend of increasing growth. In contrast, after 1865 radial growth of the N. nitida stand is fairly constant and steady. Radial growth of these two species is highly correlated with spring rainfall.