
Climatic vulnerability of forestry species in Durango

Climate vulnerability of forest species in Durango (Fomix-Dgo, 2017).

Abstract

Extreme climatic events have caused changes in the distribution and dominance of forestry species in many regions of the world. Particularly in regions of Mexico and the USA, it has been documented that ecosystems will experience increasingly dry conditions. If these projections are correct, forests will be vulnerable and their decline in productivity, along with increased cases of massive mortality, will have serious consequences for the economic and ecological development of the region. In Mexico, this concern could be addressed by adopting a dendroecological approach (i.e. the application of dendrochronology to ecological questions). The variable climate, topography and biodiversity of the state of Durango make it an ideal site for biogeographic research of the growth response of trees to variations in regional drought. This region has also been widely documented because of the teleconnections of the ENSO phenomenon that control to a large extent the hydric regime of the zone. The objective of this proposal is to study the vulnerability and capacity for adaptation of coniferous species of the state of Durango in response to climatic variability along an ecological gradient. This is of great relevance to the socioeconomic, agricultural and ecological systems of the study region, an area in which water availability is limited. This proposal will facilitate an increase in policies of protection, adaptation and mitigation of forestry decline, and will thus reinforce federal government programs. Through integration of the efforts of students and researchers, this study constitutes a strategic theme to respond to a scientific problem of global concern that is particularly pertinent in the face of climatic change.