Project Database of ICP Forests
PROJECT DESCRIPTION

PROJECT INFORMATION

Project title: Forest status and trait relationships with insects

Project ID: 39

Contact person: Prof. J. Panuelas (Josep.Penuelas@uab.cat)

PROJECT DESCRIPTION

Our main aim is to update the recent Work by Carnicer et al. (2011) and study the effect of global warming on European Forests' phenology from 1986 to 2012-2013. Recent works suggest that at continental scales, climate warming may be differentially altering the structure, composition and dynamics of wet and warm forested areas in contrasting directions (Carnicer et al. 2011). For instance, over the last decades an increase of the average global net primary productivity has been reported (Boisvenue and Running 2006) but water-limited forests in southern Europe and other areas may be effectively declining (Breeshears et al 2005, Jump et al 2006, van Mantgem et al 2007, Carnicer et al. 2011).

To assess this hypothesis, we will use generalized linear models (GLMs) to model annual variation of defoliation percentages (main response variable). We would like to test the effect of climatic water deficit on the phenology of widespread tree species in Europe (Quercus, Fagus, Pinus, Betula and other dominant species), contrasting, whenever possible, northern wet and Mediterranean Warm areas. Our study will focus on climate-induced drought effects; however, we will introduce other co-variables in the models to assess their relative importance (air pollution, types of damages (T1- T10), locality, stand density, spatial autocorrelation, species).