

In order to be as less invasive as possible, wood samples are extracted as microcores. However, specific tools and techniques are required because cambium and enlarging cells are likely to be damaged or compressed during the extraction procedure. A new tool named Trepbor is presented (patent pending n° PD2004A000324), specifically designed to overcome these limitations. Trepbor was designed for long-term samplings of microcores of 15 mm in length and 2 or 4 mm in diameter from living trees in both forest and urban areas. It is a chisel-like tool with fast sample recovery. The cutting tube is inserted into the wood using a hammer and no other accessories are required. Simple innovative technical characteristics offer (1) high quality samples on both softwood and hardwood species, (2) minimum damage to sampled trees, (3) ergonomic shape and (4) simple use. Trepbor was tested during the 2004 growing season for several hundreds of samples in both conifer and broadleaf species, demonstrating suitable resistance to wear and tear and mechanical stresses of the cutting part.

Application of dendrochronology to sustainable forest management in high mountain forests of Ethiopia

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Highland forests in Ethiopia suffered degradation for thousands of years, with an exponential increase since the middle of the XXth century. The combined use of dendrochronology and matrix modelling is used to come up with suggestions for restoration and sustainable management of the dry afro-montane forests.

Juniperus procera, an endemic and dominant tree species of the major forest type in Ethiopia. We studied its growth and population dynamics in the Menagesha National forest priority area, 45

km to the southwest of Addis Ababa. Tree-ring analysis and matrix modelling were combined in a simple way to project the evolution of the juniper population into the future and predict the influence of possible management actions. The results are compared to those of an earlier study conducted in the Adaba-Dodola Forest Priority Area, south of the country.

Matrix models allow studying demography of trees with limited data sets and can be easily constructed and interpreted. However, they require information on age and growth rates of the trees which can be provided by dendrochronology.

Inventory has been done on six plots with different levels of disturbance. Stem disks and cores are collected from in total 20 junipers.

We found that that *Juniperus procera* in these woodlands forms annual growth rings, in response to precipitation. In some cases it was possible to relate intra-annual density variations to seasonal variation in precipitation. Ages and growth rates of the trees could be calculated and served as input for the matrix model analysis. We will present the results of the demographic analysis derived from matrix modelling and present some suggestions for future forest management of these susceptible forest ecosystems.

Dendrochronological analysis of earlywood and latewood chronologies of oak in the Northwest of the Iberian Peninsula

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Separated measurements of earlywood and latewood width are not often discriminated when developing tree-ring chronologies of ring-porous species such as oak. Traditionally, it has been accepted that earlywood width scarcely varies from year to year; furthermore, much of its year-to-year variation has been observed to be mainly determined by