News of Forest History

EuroDendro 2008
The long history of wood utilization

News of Forest History
Nr. V (39)/2008

EuroDendro 2008
The long history of wood utilization

IMPRESSUM

Medieninhaber und Herausgeber:
Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft;
Band V (39) erstellt in Zusammenarbeit mit Universität für Bodenkultur Wien,
Department für Materialwissenschaften und Prozesstechnik, Institut für Holzforschung;
gemeinsam mit IUFRO Working Group 6.07.00; Dipl. FW. Dr. Elisabeth Johann.

Editoren: Michael Grabner, Universität für Bodenkultur Wien; und Dieter Eckstein, Universität Hamburg

Gesamtkoordination: Lebensministerium Abteilung IV 4 SL-Stv. MR DI Dr. Johannes Schima,
ARat. Fö. Ing. Johann W. Kiessling; Universität für Bodenkultur Wien, DI Dr. Michael Grabner

Namentlich gekennzeichnete Beiträge geben ausschließlich die Meinung der jeweiligen Autoren wider.

Bildnachweis: Bei Photos angegeben, wenn nicht - Photo Kiessling (alle unentgeltlich beigestellt).

Dendroclimatological investigation on Douglas fir (Pseudotsuga menziesii) in Lithuania.

Dendroclimatological research on Rocky Mountains Douglas fir (*Pseudotsuga menziesii var. glauca* (Beissn.) Franco) and Green Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco) - introduced trees in Lithuania - has been conducted. For the purpose of research 19 research plots on Douglas fir were selected.

Tree-ring-widths were measured and local chronologies were constructed as bi-weight robust means. Compiled masterchronology covers 187 trees and spans from 1910 to 2004. Response function analysis has shown positive and significant influence of air temperature at the end of winter beginning of spring to the radial growth of Douglas fir, while the strong positive impact of precipitation in June prevails in the eastern Lithuania. Analysis on pointer years of the radial growth has indicated that depressions of the radial growth of Douglas fir are driven by colds in winter spring and droughts in summer. Increases of the radial growth are connected to warm winters and humid summers. Accordingly, conditions more favourable for the growth of Douglas fir are in the West Lithuania.

Our research indicates that the importance of winter colds as the limiting factor for the radial growth of Douglas fir at the end of the 20th century has decreased, while summer droughts gain greater importance. Our investigation has revealed that dry off of Douglas fir at the end of 20th coincided with period of extreme droughts, which have played as a predisposing factor for the decline of Douglas fir.

Poster: **Adomas Vitas** (1), Kęstutis Žeimavičius (2)
(1) Vytautas Magnus University, Faculty of Nature Sciences, Lithuania
(2) Vytautas Magnus University, Kaunas Botanical Garden, Lithuania

Reconstruction of Stirniai lake (north-eastern Lithuania) level for the Medieval Warm Period: dendrohydrological study.

Dendrochronological research has been carried out on wood of subfossil pines found in Lake Stirniai, north-eastern Lithuania. Stumps with root remnants of 14 subfossil pines were found in the 1.16 m water depth. Nine samples were cross-dated and 213 years length floating chronology was compiled. Radiocarbon dating of the samples has shown that pines lived in the transition between Medieval Warm Period and Little Ice Age (from 1103±80 AD to 1315±80 AD).

Narrow tree rings are characteristic for the young age of trees. The growth of trees has dramatically increased up to 3-10 mm when trees reached 40-years-old. This confirms that pines grew on site with deep peat soil. The long-term observations on the fluctuations of groundwater in the peat bog carried out since 1997 to 2007 have revealed that the soil water level fluctuates from 20 to 60-70 cm depth during the summers. It means that in time of Medieval Warm Period, the ground water level in the growing place of subfossil pines probably was bellow for about 1.0 m than nowadays lake water level.

The longest part of subfossil pines growing coincided with the Medieval Warm Period but the growing conditions suddenly became unfavourable in ~1270±80 AD which is reflected in the sharp decrease in ring width from 6.0 mm to 0.5 mm.

Poster: **Adomas Vitas**
Vytautas Magnus University, Faculty of Nature Sciences, Lithuania