



WorldDendro 2010

The 8th International Conference on Dendrochronology

ABSTRACTS

EDITORS: Kari Mielikäinen, Harri Mäkinen and Mauri Timonen

June 13 – 18, 2010, Rovaniemi, Finland

Mielikäinen, K., Mäkinen, H. & Timonen, M. (eds.). 2010. WorldDendro 2010. Abstracts of The 8th International Conference on Dendrochronology, June 13–18, 2010, Rovaniemi, Finland. 379 p. ISBN 978-951-40-2235-7

This publication will be available at <http://www.metla.fi/julkaisut/muut>

ISBN 978-951-40-2234-0 (pdf)

ISBN 978-951-40-2235-7 (paperback)

Keywords: dendrochronology, climate change, tree ring, environment, forest

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Cover: Jouni Hyvärinen

Cover photos: Mauri Timonen

Layout: Irene Murtovaara

Publisher: Finnish Forest Research Institute (Metla)

Printed in Tornion Kirjapaino, Tornio, Finland 2010

C2.09. Wood anatomical analysis of broad-leaved trees injured by debris-flow events	161
<i>Estelle Arbellay, Markus Stoffel, Michelle Bollschweiler</i>	
C2.10. Investigating relationships between ring width, density and cell properties for two long-lived Southern Hemisphere conifers.....	161
<i>Kathryn Allen, David Drew, Geoff Downes, Rob Evans, Patrick Baker, Rohan Simkin</i>	
C2.11. Tree rings used to assess effects of gypsy moth (<i>Lymantria dispar</i> L.) defoliation on wood volume growth of oaks (<i>Quercus</i> spp.) in Pennsylvania, USA.....	162
C2.12. The ecological success of the mangrove <i>Avicennia</i> : The perfect combination of well-adapted wood anatomical characteristics and special radial growth?.....	163
<i>Elisabeth Robert, Nele Schmitz, Tess Driessens, Ilse Boeren, Hans Beeckman, Nico Koedam</i>	
C2.13. Microstructure and chemical composition of tree-rings: New opportunities for multiparameter analysis	164
<i>Pavel Silkin</i>	
C2.14. Impact of three silvicultural regimes on radial growth and wood quality of black spruce, a study case in the boreal forest.....	165
<i>Émilie Pamerleau-Couture, Cornelia Krause, Ahmed Koubaa</i>	
C2.15. Spatio-temporal variation of earlywood vessel features of <i>Quercus robur</i> L. along a climatic gradient in the Northwestern Iberian Peninsula.....	166
<i>Ignacio García-González, Saúl de la Peña Lastra, Vicente Rozas Ortiz</i>	
C2.16. Disturbance history of mountain spruce forests in the Carpathian Mts. derived from tree-rings.....	167
<i>Tomasz Zielonka</i>	
C3 Dendroecology of shrubs	
C3.01. Ecological significance of annual rings in trees, shrubs and herbs	168
<i>Fritz Schweingruber</i>	
C3.02. Scaling the mountains and roaming the tundra – expanding shrubs in North-Scandinavia and Northwest-America.....	169
<i>Martin Hallinger, Isla Myers-Smith, Martin Wilmking</i>	
C3.03. Deciduous shrub growth and the greening of the Arctic in Western Siberia.....	170
<i>Bruce C. Forbes, Marc Macias Fauria, Pentti Zetterberg</i>	
C3.04. Annual shoot length growth of the Arctic dwarf shrub <i>Cassiope tetragona</i> as monitor of present-day and past climate change.....	171
<i>Stef Weijers, Jelte Rozema</i>	
C3.05. Comparison of tree ring patterns of dwarf shrubs and trees of the genus <i>Betula</i> at the upper timberline in Norway	172
<i>Cathrin Meinardus, Britta Weinert, Achim Bräuning, Iris Burchardt, Jörg Löffler</i>	
C3.06. Are shrubs climbing mountains faster in warmer microclimates?	173
<i>Isla H. Myers-Smith, Martin Hallinger, David S. Hik</i>	
C3.07. Interaction of geomorphic features and dendrochronological potential of polar dwarf shrubs (<i>Salix polaris</i> , Svalbard).....	173
<i>Agata Buchwal</i>	
C3.08. Advances of shrub in dendrochronology study in China.....	174
<i>Xiao Shengchun, Xiao Honglang</i>	
C4 Intra-annual cambium dynamics and wood formation	
C4.01. Application of controlled experiments for studies of radial growth of trees	175
<i>Jozica Gricar</i>	
C4.02. Intra-annual cambial activity and carbon availability in stem of poplar.....	175
<i>Annie Deslauriers, Alessio Giovannelli, Sergio Rossi, Laura Traversi</i>	
C4.03. Predicting timings of xylogenesis in black spruce under climatic warming	176
<i>Sergio Rossi, Annie Deslauriers, Hubert Morin, Cornelia Krause</i>	
C4.04. Intra-annual radial growth in Scots pine (<i>Pinus sylvestris</i> L.) exposed to drought	177
<i>Walter Oberhuber, Andreas Gruber</i>	

C2.15 Oral

Spatio-temporal variation of earlywood vessel features of *Quercus robur* L. along a climatic gradient in the Northwestern Iberian Peninsula

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Common European oak (*Quercus robur* L.) reaches its southwestern distribution limit in Europe close to the Northwestern Iberian Peninsula, where the transition to Mediterranean vegetation results in a progressive substitution of this species as xeric conditions increase. For this reason, xylem adaptations to drought conditions are relevant for the survival of these oaks, while their analysis by means of dendrochronological techniques can be useful to study their behavior in changing environments.

For this work, we selected a network of 12 sites distributed all along Galicia (NW Spain), trying to characterize the transition to the Mediterranean climate within the region. Earlywood vessels were measured for 10 trees per site for a common period of 20 years, and combined into several growth variables combining vessel size and numbers (mean and maximum vessel area, number of vessels, total conductive area and conductivity), also considering the position within the ring. We used these data to build chronologies for each growth variable and site, which were compared by multivariate techniques.

The results showed that vessel characteristics varied among sites according to the prevailing conditions along the gradient. Similarly, the comparison of time series provided a more detailed picture of the influence of climate on the adaptations of xylem anatomy. In summary, this work constitutes one of the first attempts to apply quantitative tree-ring anatomy to a network of site chronologies, and can be of relevance to the study of global change.

WorldDendro 2010 took place June 13 – 18, 2010 in Rovaniemi, northern Finland. It is the largest regularly held conference on dendrochronology. About 350 researchers from over 40 countries participated the conference. The WorldDendro 2010 focused on climate change and sustainable development of the forests. Specific themes covered were, for example: dendroarchaeology, dendroclimatology, dendroecology, forest health, stable isotopes, wood anatomy, and recent technical advances in dendrochronology.

WorldDendro 2010 was organized by the Finnish Forest Research Institute (Metla) in conjunction with Association for Tree-Ring Research, Tree Ring Society, Asian Dendrochronology Association, and IUFRO WP 5.01.07 Tree Ring Analysis.

www.worlddendro2010.fi

ISBN 978-951-40-2234-0 (pdf)
ISBN 978-951-40-2235-7 (paperback)