Newsletter of the Association for Tree-Ring Research

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TRACE 2014 in Aviemore (Scotland)

By Achim Bräuning

The last TRACE conference took place in Aviemore (Scotland) during 7-9 May 2014, organized by Rob Wilson from the Department of Geography & Sustainable Development, School of Geography and Geosciences, University of St Andrews. The event was held in a countryside holiday resort, in a structure surrounded by a mountain forests and lakes.

The more than 100 participants enjoyed a tight and interesting program, divided almost equally between talks and posters, including the topics wood anatomy, dendrochemistry, stable isotopes, ecology, tree-ring response and clima- tology.

The program of TRACE included a cultural evening with local food, drinks (including Scotch Whisky, of course) music and dancing. Before, however, the participants were guided by Rob Wilson and his team through the pine forests surrounding the Highland lake Loch an Eilein and were introduced into local dendroarchaeol- ogy and dendroclimatology. Thanks to St. An- drews' team the meeting was a great enjoyment and success!

Impressive pine forests around Loch an Eilein

Rob Wilson explaining the history of Scottish pine forests

TRACE participants enjoying the Scottish music and dancing

ATR membership meeting 2014

The annual membership meeting 2014 of ATR was also held during TRACE 2014 in Aviemore. ATR President Achim Bräuning reported about activities during 2013 and 2014. ATR participated in sponsoring the field week of the Asian Dendrochronology Conference 2013 in Iran (see below), The Napels symposium on "Wood structure in Plant

Biology and Ecology", and the field week associated with the 9th Inter- national Congress on Dendrochronology in Mel- bourne, Australia.

After the reports on annual activities and financial balance, the exoneration of the executive board was accepted without a dissentient vote.

An important point was the election for the ATR executive board for the next two years. The following members were elected:

President

Prof. Dr. Achim Bräuning

Institute of Geography Universität Erlangen-Nürnberg

Vice president

Dr. Holger Gärtner

Swiss Federal Institute for Forest, Snow and Landscape Research WSL

Secretary

Dr. Ute Sass-Klaassen

Wageningen University, Centre for Ecosystem Studies, Forest Ecology and Forest Management

Treasurer

Dr. Gerd Helle

Helmholtz-Zentrum Potsdam, Deutsches Geo-ForschungsZentrum (GFZ), Klimadynamik und Landschaftsentwicklung

Extended Board Members

Dr. Giovanna Battipaglia

Department of Environmental, Biological and Pharmaceutical Sciences and Technologies Second University of Naples, Italy

Dr. Ryszard Kaczka

Faculty of Earth Science, University of Silesia, Bedzinska 60, 41-200 Sosnowiec, Poland

On behalf of the newly elected board, A. Bräun- ing thanked all members for their trust and confidence.

Your membership fees are needed for student support !

ATR has the mission to support tree-ring research by supporting events that focus on teaching tree-ring sciences and by enabling young researchers to participate in training events and the annual TRACE conferences. Moreover, ATR participates in international tree-ring events like the International Conference on Dendrochronology and collaborates with other academic organizations like the Asian Dendrochronology Association. These activities have created a lot of acknowledgement and credit of ATR as an international partner in tree-ring sciences.

However, these activities can only be accomplished if ATR is able to maintain a healthy financial status. Unfortunately, during the past years we are facing an increasing tendency of declining incoming membership fees, resulting in a steady decrease of the financial buffer and resources of ATR. The most important financial resource of ATR comes from its members. Unfortunately, members sometimes forget to contribute their membership fees when they are unable to attend the annual TRACE conference. The ATR treasurer is regularly sending out reminders, but sometimes Email addresses changed or members do not respond to these reminders. Therefore ATR kindly reminds all members to update their personal data if there ae any changes in affiliation, and to pay their membership fees. Otherwise, it is questionable if ATR will be able to continue its very

successful activities of supporting young scientists and promoting tree-ring research on an international level.

ADA 2015 in Katmandu (Nepal)

By Achim Bräuning

The 4th Asian Dendrochronology Association's (ADA) biannual conference will be held from March 9-12 in Kathmandu, Nepal. ATR will continue the long cooperation with ADA, sup- porting the pre-conference field week and den- drochronology training course. ATR president Achim Bräuning will also participate as one of the teachers and was also invited for a keynote lecture on European dendrochronology. A report about this event will be given in the forthcoming newsletter.

Announcement: TRACE 2015 in Sevilla

By Raúl Sánchez-Salguero

Dear ATR members, dear tree-ring colleagues, We are glad to announce that *TRACE 2015*

organized by the University Pablo de Olavide (UPO) and the Association for Tree-ring Research (ATR), in collaboration with Pyrenean Institute of Ecology-Spanish National Research Council (IPE-CSIC), University of Barcelona (UB), Forest and Wood Technology Research Centre (CETEMAS) and University of Valladolid (UVa), will be held in Sevilla (Spain) during 20-

23 May 2015. Registration is now open; deadline for sending abstracts is 31st of March 2015. For details of conference fees, location and program, please have a look at www.dendrospain.es.

TRACE 2015 seeks to strengthen the network and scientific exchange of scientists and students involved in the study of tree-rings. It aims at presenting and discussing new discover- ies and approaches across the breadth of tree- ring science. The scope of the meeting includes all fields of dendrochronology and its applica- tion* in archaeology, climatology, geomorpholo- gy, glaciology, fire history, forest dynamics, ecology, plant anatomy, hydrology and physiol- ogy, including the use of stable isotopes.

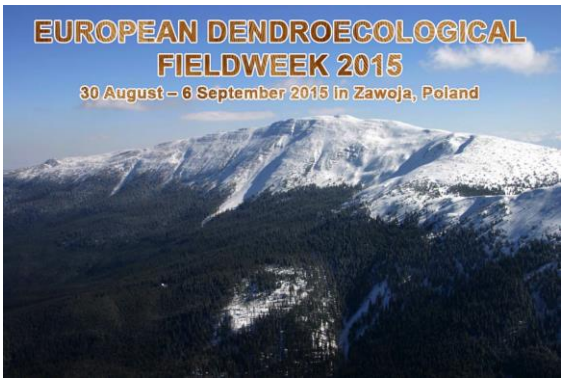
We are looking forward to welcome you in Sevilla!

TRACE 2015 - Organizing Committee

Achim Bräuning (on behalf of ATR)
Juan C. Linares (UPO)
Raúl Sánchez-Salguero (UPO)
José I. Seco (UPO)
J. Julio Camarero (IPE-CSIC)
Emilia Gutiérrez (UB)
José M. Olano (UVa)
Andrea Hevia (CETEMAS)

Dendro-Field week in Poland

By Ryszard Kaczka



26th European Dendroecological Fieldweek will be held on 30 August - 6 September 2015 in Zawoja, south Poland. It will be organized by

Kerstin Treydte & David Frank from Swiss Federal Institute for Forest, Snow and Landscape Research WSL and Ryszard Kaczka, Karolina Janecka from Faculty of Earth Science, University of Silesia.

The fieldweek is addressed to all people interested in tree-rings, especially students of all level. The European Dendroecological Fieldweek is an official course of University of Bern awarded by ECTS points.

Topics will traditionally cover the full spectrum of dendrochronological issues and foster cross-disciplinary links.

Each topic will include keynote lectures, field work, sample preparation and tree-ring analyses in small groups.

It will be an opportunity to learn, discuss and make new friends from all around the world.

For more details visit the website: dendro2015.pl or contact us (dendro2015@mail.com).

Series: Tree-ring labs in Europe

By Giovanna Battipaglia

The Laboratory of Dendro-ecology is based at the Second University of Naples, Italy. The laboratory consists of a fully-equipped dendro- lab (microscopes, binocular stereoscopes, scanner, LINTAB measuring stage with TSAP software, image analysis software) a wood preparation lab and a chemical lab.

The associate facility for Isotopic Research (CIRCE) hosts a conventional mass spectrome- try (IRMS) laboratory for the stable isotope anal- ysis of solid, gaseous and liquids samples, equipped with 2 mass spectrometers, 2 Ele- mental Analyzers (EAs), 1 pyrolysis (TC/EA) and a gas-chromatographic system coupled with a combustion and pyrolysis interface (GC-C/TC- IRMS). Further, it hosts a 3 MV accelerator mass spectrometry (AMS) system, a sample preparation laboratory for the AMS measure- ments in ultralow 14C contamination conditions. In 2010 CIRCE centre radiocarbon dating pro- cedure gained the ISO 9001:2008 certificate and in 2012 became one of the laboratories listed in the Nuclear Physics European Collaboration Committee (NuPECC) an expert committee of the European Science Foundation.

Figure 1: Laboratory for chemical-physical analyses

Scientific team

Simona Altieri, post doc
Giovanna Battipaglia, Research Scientist
Simona Castaldi, Research Scientist
Elisabetta Giuditta, PhD
Carmine Lubritto, Research Scientist
Davide Stabile, master
Student Sandro Strumia, Research Scientist

Figure 2: IRMS facility

Figure 3: Sampling fire scars (Cotignac, France)

Fields of Research

•Dendrochronology application of stable iso- topes, ring width and wood density to derive palaeoclimate reconstructions at the northern treeline forests and to reconstruct spatio- tem- poral dynamics of vegetation.

•Forest Ecology Application of dendroecolo- gy and stable isotopes ($\delta^{13}C$, $\delta^{15}N$, $\delta^{18}O$) to understand the responses of Mediterranean, tropical and temperate trees to climate, with special emphasis on their mechanisms to cope with drought and with atmospheric CO_2 in- crease;

•Fire Ecology: application of dendroecology, stable isotope, radiocarbon and soil ecology to understand the effect of wildfires and prescribed burning on Mediterranean vegetation.

•Biogeochemistry of terrestrial ecosystems i.e., forest, grassland and cropland, particularly the response of soil and ecosystem carbon, nitrogen and water dynamics to climatic conditions and management regimes.

Figure 4: Sampling with a new drill device (Bormio, Italy)

Ongoing projects

1) CARBOTREES "Climate change mitigation strategies in tree crops and forestry in Italy". Specific aim: quantification of water use efficien- cy and ecophysiological

performance of several trees species in relation with their capacity of C sequestration. Italian National Research Pro- jects (MIUR-PRIN) 2011-2014

2) "The role of African tropical forests on the Greenhouse Gases balance of the atmosphere" Specific task: determination of the carbon source/sink strength of African tropical rainforest in the pre-industrial versus XXth century by temporal reconstruction of biomass growth with biogeochemical markers. GHG AFRICA- ERC GRANT

3) "Effects of climate change on wood growth in Mediterranean ecosystems: past reconstruc- tions, present assessment and future perspec- tives" Specific aim: identification of the dynamics of tree-ring formation in different species of Mediterranean ecosystems in relation to climatic factors, especially water availability, in order to attain a fine key of interpretation of environmen- tal signals in tree-ring chronologies with intra- annual resolution. National Project

4) "Effects of prescribed burning on Mediterranean vegetation". Regional project AIB 2012-2015.

5) STReESS "Studying Tree Responses to extreme Events: a SynthesiS". Specific aim: study of the distribution, frequency and ecologi- cal functions of intra annual density fluctuation (IADFs). EU COST Action FP1106.

Recent Publications

1. Battipaglia G., De Micco V., Brand W.A., Saurer M., Aronne G., Linke P., Cherubini P. (2014) Drought impact on water use efficiency and intra-annual density fluctuations in Erica arborea on Elba (Italy) Plant, Cell and Environ- ment, 37 (2), pp. 382-391.

2. Battipaglia G, Strumia S, Esposito A, Giuditta E, Sirignano C, Altieri S, FA Rutigliano (2014) The effects of prescribed burning on Pinus halepensis Mill. as revealed by dendro- chronological and isotopic analyses. Forest Ecology and Management 334: 201-208.

3. Moreno-Gutiérrez C., Battipaglia G., Cherubini, P., Delgado Huertas, A., Querejeta, J. I. (2014) Pine afforestation decreases the long-term performance of understorey shrubs in a semi-arid Mediterranean ecosystem: A stable isotope approach Functional Ecology, DOI:

10.1111/1365-2435.12311

4. Campelo F, Vieira J, Battipaglia G, de Luis M, Nabais C, et al. (2015) Which matters most for the formation of intra-annual density fluctuations in Pinus pinaster: age or size? Trees: 1-9.

5. Tandoh, J.B., Marzaioli, F., Battipaglia, G., Capano, M., Castaldi, S., Lasserre, B., Mar- chetti, M., Passariello, I., Terrasi, F., Valentini, R. Biomass growth rate of trees from Cameroon based on 14C analysis and growth models (2013) Radiocarbon, 55 (2-3), pp. 885-893

Figure 5: Experimental Prescribed Fire in Pinus pinea (Italy)

Mini editorial

Any contributions (e.g. science news, announcements or reports on forthcoming meetings, introductions about tree-ring laboratories) are welcome and should be sent to:

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