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INTERNATIONAL SCIENTIFIC CONFERENCE ON "BIOCLIMATOLOGY AND NATURAL HAZARDS"

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Travelling to the Slovak Republic, one of the new (since 2004) member-states of the EU, was a very pleasant surprise. From the point of view of human and natural ecology, this country of about 49,000 km² and 5.4 million inhabitants is constituted by two main regions: the Tatra Mountains (where the forest is the primary resource) and the lowlands of the Danube plain (a fertile farming region that produces wheat, barley, potatoes, sugar beet, fruit, tobacco and grapes)[3]. The capital, Bratislava (located close to the border with Austria and just over 50 km away from Wien and Hungary), is the main entrance point to this country.

The International Conference on "Bioclimatology and Natural Hazards" took place on September 17-20, 2007, and was organized by the Faculty of Forestry of the Natural Environment Department, Technical University of Zvolen (the only faculty in Slovakia that provides advanced training in the field of wood processing). Zvolen itself is a very nice town of about 45,000 inhabitants located in central Slovakia, with a history of more than 760 years. Although the foundation of its Castle, known as the Deserted Castle, dates back to the 10th century, the rise to town status did not occur until 1243, when King Belo IV granted royal town privileges to Zvolen. The historical influence of the Hungarian empire is manifest in the current structure of the population of Zvolen: although more than 80% are Slovaks, 11% originate in that ethnic region. In the 19th century, L'udovít Štúr became the first member of the Hungarian Parliament to represent Zvolen. He actively sought to advance the causes of the national liberation of the Slovaks, the recognition of the Slovak language and the granting of equal civil rights to the Slovak nation as a whole (http://eng.zvolen.eu).

The aim of the conference was to "discuss exclusively recent research developments in the interactions between meteorological, climatological, hydrological and biological processes in both atmosphere and soil" (from the conference flyer). The plenary sessions took place in the building of the Technical University, whereas the remaining ones were

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[3] http://europa.eu/abc/european_countries/eu_members/slovakia/index_en.htm)

held at the Hotel Pol'ana, located inside the Pol'ana nad Detvou UNESCO Biosphere Reserve (in the Western Carpathian Mountains) and 12 km away from the town of Hriňová. Within the altitude range 460 m – 1458 m, the entire reserve (classified as temperate broadleaf forest) is made up of primary spruce forests (with *Picea abies*, *Sorbus aucuparia* and *Acer pseudoplatanus*), beech forests and mixed forests with beech, fir and spruce. Wetlands and grasslands can also be found, and are being actively researched and managed in order to ensure the conservation of these valuable biotopes (http://www.unesco.org/mabdb/br/brdir/directory/database.asp).

During this 4-day conference, 250 participants from 16 different countries presented and discussed 141 oral and 67 poster communications divided into 12 thematic areas. The plenary sessions took place in the first day of the conference and were held at the Lecture Hall of the Technical University, in Zvolen. These sessions focused on three main topics and included the following presentations:

Topic 1 – "Extreme events, risks, and responses": M. Lapin *et al.* – Methods of extreme weather events selection and some results of elaboration; P. Fleischer *et al.* – Primary natural risks and disturbances in the Tatras National Park in the last decade; C. Mátyás *et al.* – Genetic background of response of tree populations to aridification at the xeric forest limit; consequences for climatic modelling; V. Novák – Drought – how to quantify it?; T. Niedzwiedz – Extreme cool and warm summers in Tatra Mountains (1550-2006); Holécy J. – The paradigm of risk and the vulnerability of forest by natural hazards; A Lopes *et al.* – Wind risk assessment in urban environment: The case of falling trees during windstorm events in Lisbon.

Topic 2 – Forest and soil bioclimatology: Marek M. V. Forest stand canopy – an active exchanger of the energy and mass between land surface and atmosphere; Rajkai K. – The role of soil in bioclimatology; J. Škvarenina *et al.* – Forest bioclimatology – history, present state and perspectives in Slovakia; Gerke H. – Preferential flow and transport in structured and heterogeneous soils: Biohydrological effects controlling mass transfer through flow path interfaces.

Topic 3 – Climate variability and Indices: J. Matschullat *et al.* – Precipitation trend analysis for central eastern Germany; G Jendritzky *et al.* – Cost Action 730 on the Universal Thermal Climate Index UTCI.

The remaining sessions focused on the following issues and fields: "Air Pollution and Technological Bioclimatology", "Agrometeorology", "Bioclimatology", "Biohydrology", "Climate Change and Weather Extremes", "Ecophysiology and Phenology", "Geofactors and Environment", "GIS Application in Bioclimatology and Landscape ecology", "Human and Animal Bioclimatology", "Hydrology and Pedology" and "Natural Hazards".

The **concluding message** highlighted a number of key issues:

- The need to raise awareness about the increasing risk of natural hazards triggered by weather extremes (most problematic in inhabited areas);
- The importance of taking the ecosystems' "memory" into account in order to understand their current and future behaviour;

- To keep in mind that, under changing climate conditions, species migrations are limited;
- The fact that most European landscapes are cultural creations that cannot revert to a natural state, and that, therefore, leaving those systems to themselves, is not a sustainable option;
- The central role played by planning and adequate decision-making in bringing about sustainable development;
- Climate change in Eastern Central Europe is neither properly understood nor represented in climate scenarios.

The social program throughout the conference was very intense and included two fieldtrips, one inside the Pol'ana National Reserve and the other focusing on "wind throw and forest regeneration". This second fieldtrip was particularly interesting in that it was possible to witness *in loco* both the disruptive effects of wind storms in the forests of Central Slovakia and the natural regeneration that takes place after a few years. Additional visits to the historical forest railway in Čierny Balog and to the forestry museum in the Vydrovská Valley further demonstrated the past and present importance of this cultural landscape for the Slovak economy.

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