

## 18th World Congress of Soil Science (WCSS), 9–15 July 2006, Philadelphia, PA

### Urban Soil Science on the 18<sup>th</sup> WCSS

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The 18<sup>th</sup> World Congress of Soil Science had the motto 'Frontiers of Soil Science'. One of its sessions, 'Soils in Urban Ecosystems: Characteristics and Functioning', was organized by the IUSS working group on urban soils which is currently headed by Wolfgang Burghardt and Jean-Louis Morel. With respect to the congress' motto, it really can be stated that urban soil science is one of the most challenging current frontiers of soil sciences, since the variability of urban soils is highly challenging and because of the fundamental importance of urban soils for the sustainability of urban systems. More than 30 excellent contributions were presented in this session from all over the world.

Comprehensive information on the urgently needed classification of urban and industrial soils within the World Reference Base for Soil Resources (WRB) was provided by David G. Rossiter from the International Institute for Geo-Information Science and Earth Observation (Enschede, The Netherlands). He reported about the progress in establishing Technisols as the 31<sup>st</sup> reference group within in the WRB. Soils of this group are dominated by artefacts, impermeable geomembranes or technic hard rock (Rossiter 2006). His homepage (<http://www.itc.nl/personal/rossiter/>) provides various valuable information on urban soils, especially with respect to classification issues.

A superb study on early pedogenic evolution of constructed soils was presented by Geoffrey Séré et al. from the Laboratory of Soils and Environment (Ecoles National Supérieure d'Agronomie et des Industries, Nancy, France). This group described the early pedological processes occurring in freshly established urban soils, such as decarbonisation, compaction and formation of sub-horizons. They conclude that similar mechanisms and processes occur in Rendzic Leptosols and constructed soils (Séré et al. 2006).

Trinks et al. (2006) from the Institute of Ecology of the Technical University of Berlin presented an approach to model hydraulic properties in urban soils developed from construction rubble. Measurements in the laboratory experiments showed that those materials have a high degree of porosity and that many of these materials also have a high unsaturated hydraulic conductivity. This group demonstrated by means of the two dimensional simulation program DELPHIN4 the influence of the heterogeneity of hydraulic properties on the development of patterns of water content and water flow paths in urban soils.

Further presentations covered the fields of urban soil development, assessment, degradation, and contamination. Moreover,

the influence of land use on soil properties was a subject presented on the congress. A few studies reported results from biological and mineralogical investigations. The presented studies were accomplished in countries from all over the world (China, France, Germany, India, Iran, Japan, Korea, Malaysia, Serbia and Montenegro, Slovakia, Spain, UK, USA). Abstracts are available at <http://crops.confex.com/crops/wc2006/techprogram/index.html>.

The session of the working group on 'Urban Soils' of the International Union of Soil Sciences provided an excellent comprehensive overview on worldwide activities and on the various aspects of urban soils. It can be concluded from the presented studies that urban soil science is a growing field for scientific activities and that further results on the genesis and endangerment of urban soils is urgently needed to ensure sustainable developments of urban systems. It is intended to publish studies presented on the 18<sup>th</sup> WCSS in upcoming issues of *J Soils Sediments* (JSS).

Next year, the IUSS is one of the organisations supporting the 4<sup>th</sup> International Conference on Soil of Urban, Industrial, Traffic and Mining areas (SUITMA). This conference will take place in Nanjing, China, from October 18–23, 2007, and is organized by Prof. Gan-Lin Zhang from the State Key Laboratory of Soil and Sustainable Agriculture in Nanjing. Detailed information is given on the webpage [www.issas.ac.cn/suitma4.htm](http://www.issas.ac.cn/suitma4.htm). Contributions to this conference are welcomed from all over the world. **Deadline for the submission of abstracts is January 31, 2007.** Many of the scientists who presented their work during the session of the IUSS working group 'Urban Soils' at the 18<sup>th</sup> WCSS will attend this meeting that will be an excellent opportunity to discuss and present ongoing research results in the field of urban soil sciences.

#### References

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<sup>1</sup> Subject Editor *J Soils Sediments*, Area Soils, Section 2: Global change and environmental risk assessment (responsible for 'Urban Soils')