

LONG TERM AIR POLLUTION EFFECT ON FOREST ECOSYSTEMS

20th International Conference of IUFRO Working Party 7.04.00 Air Pollution Effect on Forest Ecosystems

30 August - 1 September 2002
Forest Research Institute Zvolen, Slovak Republic

From 30 August to 1 September 2002, the 20th International Conference of IUFRO Working Party (WP) 7.04.00 *Air Pollution Effects on Forest Ecosystems* was held in Zvolen, Slovak Republic. The title of the conference was **Long Term Air Pollution Effect on Forest Ecosystems**. The Forest Research Institute Zvolen has been entrusted with organization of the event by the International Union of Forest Research Institutions (IUFRO). The Forest Research Institute has been a member of IUFRO since 1903. Since 1962 its specialists have been involved in the work of WP 7.04.00.

The WP conference was for the first time held in the Slovak Republic providing Slovak professionals the opportunity to present the results and the achieved level of their research in their own country and to introduce Slovakia, which seems to be still quite unknown, as a country with a rich history, culture and tradition.

The conference venues were the Forest Research Institute Zvolen and the Technical University Zvolen. The event provided an excellent platform for meeting scientists and professionals who deal with the research of air pollution effects on tree species and forests, for assessing the state of the art, and for proposing improvement and identifying priorities of the research for the 21st century.

Zvolen, as a centre of forestry research in Slovakia, was chosen for the conference at the previous meeting of IUFRO experts in Houghton, USA, in 2000. In 1998, the WP meeting was held in Edinburgh, UK, in 1996 in Florence, Italy, and in 1994 in Fredericton, Canada. The members of the international scientific organization committee of the conference were professionals from Slovakia, the United States of America, Italy and Canada: Blanka Mankovská, David F. Karnosky, Andrzej Bytnerowicz, Elena Paoletti, and Kevin Percy.

Dr. Ľán Ilavský, Associate Professor and Director of the Forest Research Institute Zvolen, opened the conference and welcomed the participants to Slovakia. The participants were shown a film about Slovak forests and the forest ecosystems. The majority of the participants had never been in Slovakia before and had little knowledge of the country and its forests.

The conference topics were dealt with in 3 sections:

Section I - Main Problems in Diagnosis, Monitoring and Evaluation of Air Pollution Effects on Forest Ecosystems

Section II - Restoration and Sustainable Management of Forests in Polluted Areas, Historical Experience and Current Practices, Economic Assessment of Air Pollution Effects on Forest Ecosystems

Section III - Long Term Air Pollution Effects on Forest Ecosystems, Impact of Climate Changes and Nutrient Conditions on Forests, Air Pollution Effect and Genetics

Dr. Blanka Mankovská had invited about 130 participants from 25 countries of the world, such as Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Croatia, Canada, Lithuania, Hungary, Poland, Austria, Romania, Russia, the Slovak Republic, Slovenia, the United States of America, Spain, Switzerland, Italy, Turkey, Ukraine, Great Britain and Scotland.

A working session of the IUFRO Committee held on 30 August 2002 was also part of the programme.

Section I included 18 contributions. The scientists agreed that future work should be directed towards a better indicator development, integrated monitoring, adoption of suited sampling design, interactions between biotic and abiotic factors, and better links between policy and science.

Section II consisted of two sessions with 9 presentations covering the management of polluted forest stands. The following conclusions were drawn: The levels of anthropogenic stresses are differentiated ranging from lower level of damage to total technogenic destruction caused by acid or alkaline deposition and by improper forest practices. Remedial silvicultural measures depend on the level of injuries.

Section III included 25 presentations concerning the state of the art of determining forest health conditions in Europe and the United States by remote sensing techniques and critical threshold mapping for acidity, heavy metals and ozone. Such results can be used to provide policy-makers with scientifically sound data in order to improve the environmental policies in Europe and in the world.

Two field excursions were part of the conference programme. The first short excursion on 31 August 2002 took the participants to the region of the Aluminium Plant in the town of Žiar nad Hronom in the central part of Slovakia where the impact of aluminium production on nearby ecosystems, in particular the effect of acid pollutants (F and SO₂) on forest ecosystems in the Žiarska valley, was explained. The publication "40 years of research of the effect of air pollutants on forest ecosystems in the Žiarska valley" by Dr. Blanka Mankovská showed the reduction of the air pollution impact in the region since 1964 as a consequence of a technology change in production of aluminium.

The second one-day excursion on 1 September to the region of Central Spiš and Ješlava-Lubeník in the eastern part of Slovakia showed the participants the impact of air pollution effects of alkaline pollutants (Mg) on ecosystems in Lubeník and of acid pollutants (SO₂) and heavy metals on forest ecosystems in Spišská Nová Ves.

Abstracts of contributions were published in the Book of Abstracts provided to all participants at the registration desk. The full papers will be published in the supplement of the scientific journal *Ekológia* (Bratislava).

Information about the conference is available on the web site: <http://www.fris.sk/en/iufro-index.htm>.

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