Forest Research Institute
Center of Excellence PROFOREST
for Protection of Forest Resources
in Central Europe

ASSESSING OF SOIL AND WATER CONDITIONS IN FORESTS

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PREFACE

Prevention of negative phenomena caused by time and spatial variability of climate conditions through rational water management is necessary for sustainable and multifunctional forest management. Rational water management in forests is also important for water relations in the areas out of forests. Interception, retentive properties of forest litter and relatively high forest soil permeability make it possible to retain part of precipitation and to replace surface runoffs with groundwater runoff. As a result, forests make the underground water resources grow and, at the same time, they reduce the flood wave peak in rivers, thus reducing flood hazards as well as they protect soil against water erosion.

The most needed activities of forest services in the area of water management and soil protection are related to the fulfilment of water resources and protection against anthropogenic activities. The fulfilment of the goals set for water management can be assessed on the basis of the quantitative and qualitative state of water resources. All activities aimed at the improvement of water resources should be preceded by a reliable diagnosis of the status quo, as well as determination of the causes of changes in water relations.

These research areas were the topics of the International Summer School (29.08-9.09.2005) entitled "Assessing of soil and water resources in forests" organized by Centre of Excellence PROFOREST and the Forest Research Institute in Warsaw. There were 22 participants from 6 countries: 11 from Poland, 3 from Slovakia, 3 Ukraine, 3 from Lithuania, 1 from Latvia and 1 from Hungary. There were also 8 lecturers (7 from Poland and 1 from Slovakia). During the first week of Summer School there were given the lectures by invited scientists and presentations of participants. During the second week study field trip was held in Białowieża Primeval Forest.

The lectures were considered on the following problems:

- classification of forestry soils,
- chemical methods of analysis forestry soils,
- principles of water flow in forestry ecosystems,
- methods of assessing water resources in forests,
- criterions and methods of improvement water condition in forests,
- protection of forestry wetlands.

In this volume are published the presentations of young participants of the Summer School. The participants presented results of their recent research. The lectures and presentations gave an opportunity for the exchange of research results and discussion on various problem of hydrology, ecology and forest sciences.

dr Andrzej Boczoń