

International Peatland course in Latvia and Finland

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From July 15-25, 2009, an International peatland training course was organised in Latvia and Finland. In the training course 25 young mire scientists/students and researchers from NGO's and other institutions took part, representing Finland, Latvia, Estonia, Belarus, The Netherlands and Poland.

Well-known peatland researchers participated in the eco-hydrological research in the field. By 'learning on the spot' the landscape-ecological relationships between the hydrological functioning of the peatlands and the occurrence of endangered plant and animal species were investigated.

The course was run under the guidance of 9 teachers from 7 institutions and 4 countries - Dr. Mara Pakalne (Latvia), Dr. Raimo Heikkilä (Finland), Dr. Tapio Lindholm (Finland), Dr. Tapani Sallantausta (Finland), Prof. Harri Vasander (Finland), Ilze Reriha (Latvia) Prof. Alberts Grootjans (The Netherlands), Prof. Leslaw Wolejko (Poland), and Gert-Jan van Duinen (The Netherlands).



The Peatland course dealt with:

- quick scan eco-hydrological analyses to assess important hydrological relationships on the landscape-scale (where does the groundwater come from, which are the causes of water loss)
- study of climate influence (temperature and precipitation) on hydrological and geochemical processes in bogs and calcareous fens (what will happen during global change?)
- technical aspects of mire restoration,
- tactics how to convince local stakeholders to invest in conserving mires for ecotourism,
- combining bio fuel production with nature conservation,
- preventing fires in drained peatlands by rewetting (and how to trade CO₂-emissions).

The training course started with a series of lectures by peatland experts in hydrology, vegetation, geology, peatland restoration that were continued by carrying out practical research activities.

During the peatland course the peatland experts from Latvia, Finland, Belarus, Estonia, the Netherlands and Poland shared their experience in peatland eco-hydrological studies, realisation of peatland conservation and

management actions in Latvia and Finland. Most experts are members of the International Mires Conservation group (IMCG; see www.IMCG.net), which is the world organisation for the conservation of mires. The invited experts had extensive and long lasting experience in peatland protection and peatland research. Many of them have been involved in international projects on mire restoration.

During the course field studies were carried out in the Slitere National Park, Gauja National park, Cena Mire Nature Reserve, Engure Lake Ramsar Site, Kalkupe River Nature Reserve and Rauna Staburags Nature Reserve in Latvia and Suurisuo, Alajoki, Ylinen Savijärvi and Taipaleensuo Mires in Finland. The sites consist of various mire complexes with gradients between groundwater and rainwater fed mires and with well developed spring mires with chalk deposition.

The International Peatland course started in Latvia on July 15 with the introductory lectures by Dr. Mara Pakalne, Prof. Albert Grootjans and Prof. Leslaw Wolejko. After the lectures the participants of the course went to Cena Mire Nature Reserve where the mire restoration issues were discussed and peatland observed in the field.

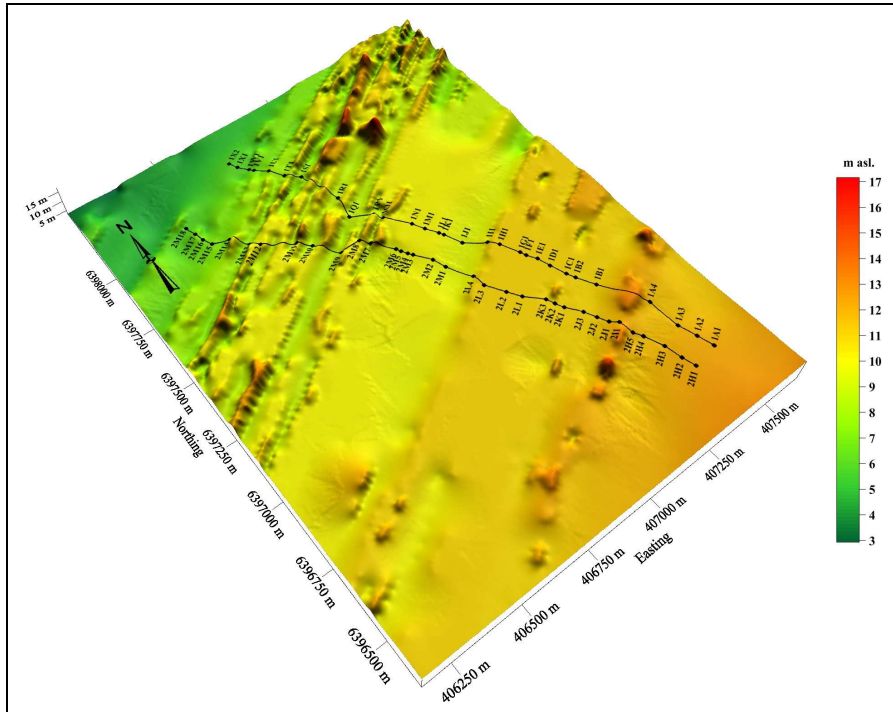
Further, the peatland course continued in the Slitere National Park and Kalkupe River Nature Reserve where from July 16-18 spring and inter-dune mires were studied. In the transects the students under the guidance of the teachers studied the eco-hydrological processes in the mires by carrying out ecological, hydrological, geological and vegetation studies that had not been made before in the interdune and spring mires in the Slitere National Park.

The interdune mire complex in the Slitere National Park is a unique landscape complex not only in Latvia but also in Europe. It is well-expressed at the coast of the Baltic Sea.

In the territory a number of studies were carried out that included eco-hydrological research, applying the unique equipment of Ab Grootjans – study of mire water electrical conductivity, pH and temperature. In both the transects vegetation releves were described, peat studies carried out to follow mire development. The study sites includes various mire types – bogs, fens and transitional mire vegetation.

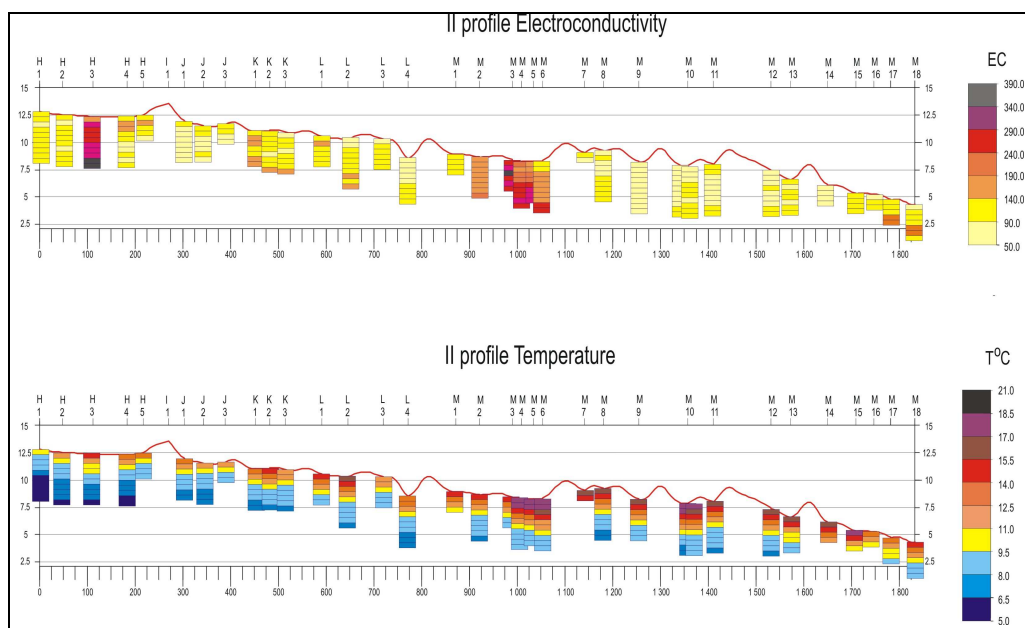
In July 2009 to study the ecological and hydrological processes in the complex of inter-dune mires the 2 transects were established (Fig. 1.) that started in **Bazi Mire** and crossed inter-dune mires.

Fig. 1. Study area profile (2 transects) across the inter-dune mire complex



Example about the results of the hydrological studies in the first and second profiles in Slitere National Park in Latvia are represented in Fig. 2. The results show the change of temperature, pH according to the vegetation types and mire habitats found along the transects.

Fig. 2. Electrical conductivity and temperature changes in the study area in the Slitere National Park



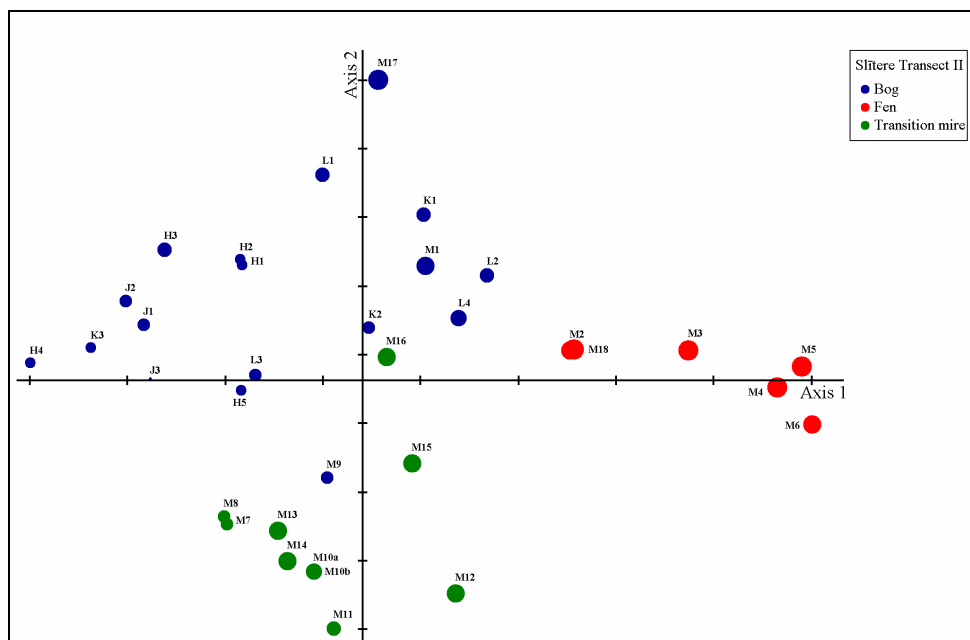
In both the transects mire vegetation was studied in the selected relevés along the transects. For each of the species in the relevés projective coverage was determined.

In Bazi Mire the typical communities in the bog vegetation was from the Class Oxycocco-Sphagnetea classes. On hummocks the community *Sphagnetum magellanici* was determined, but in hollows *Scheuchzerio – Sphagnetum cuspidati* and *Caricetum limosae*. Fen and transitional mire vegetation includes communities from the Class *Scheuchzerio-Caricetea fuscae* classes where *Carex lasiocarpa*, *Carex rostrata* and *Carex limosa* are characteristic.

The study area has a special value – the interdune mire complex is unique and rare habitat not only for Latvia but also for Europe. Rare and protected species were determined in the study sites in Latvia - *Liparis loeselii*, *Hammarbya paludosa*, *Dactylorhiza maculata*, *Nymphaea candida* and *N. alba*.

Example of the students work on vegetation data analysis is given in Fig. 1. The results in the ordination diagram reveal that in the studied sites, the habitat types include bog, fen and transition mire vegetation.

Fig. 3. Example of the plant species and habitat type ordination in the Slitere National Park made by the students of the course



On the way to the Gauja National Park, the participants of the peatland course visited Engure Lake Ramsar site.

On July 19, the course started with lectures given by Prof. Albert Grootjans from the Netherlands, Prof. Leslaw Wolejko from Poland and Jüri-Ott Salm from Estonia. After that studies were carried out in the spring mires near Amata River in the Gauja National Park and Rauns Staburags Nature Reserve. The evening was devoted to the data analysis of the studied sites.

From July 20–25 the peatland course continued in Finland. On July 21 the afternoon lectures were given by Dr. Tapio Lindholm and Dr. Raimo Heikkila from Finland and on July 22 by Dr. Tapani Sallantaus and Prof. Harri Vasander from Finland.

Peatland studies were carried out in 2 sites, Suurisuo and Taipalensuo Mires. The students studied the site hydrology, geology and vegetation. Short visits were made in Alajoki and Ylinen Savijärvi rich fens to study the natural succession of rich fens after the cessation of grazing by cattle and hay-making. There was data from all the mires from 1980s, and from Suurisuo and Taipalensuo Mires also from the 1960s as background information.

In Suurisuo mire (about 200 hectares of bogs, fens, spring mires and spruce mires), an extensive study was made during 3 days. Two profiles were studied

for peat profiles, mire water temperatures and electric conductivity, and along the profiles, a number of vegetation relevés were made. There was a lot of data available from earlier studies about the mire, and there will be a scientific synthesis article about the mire ecosystem and its biodiversity prepared.

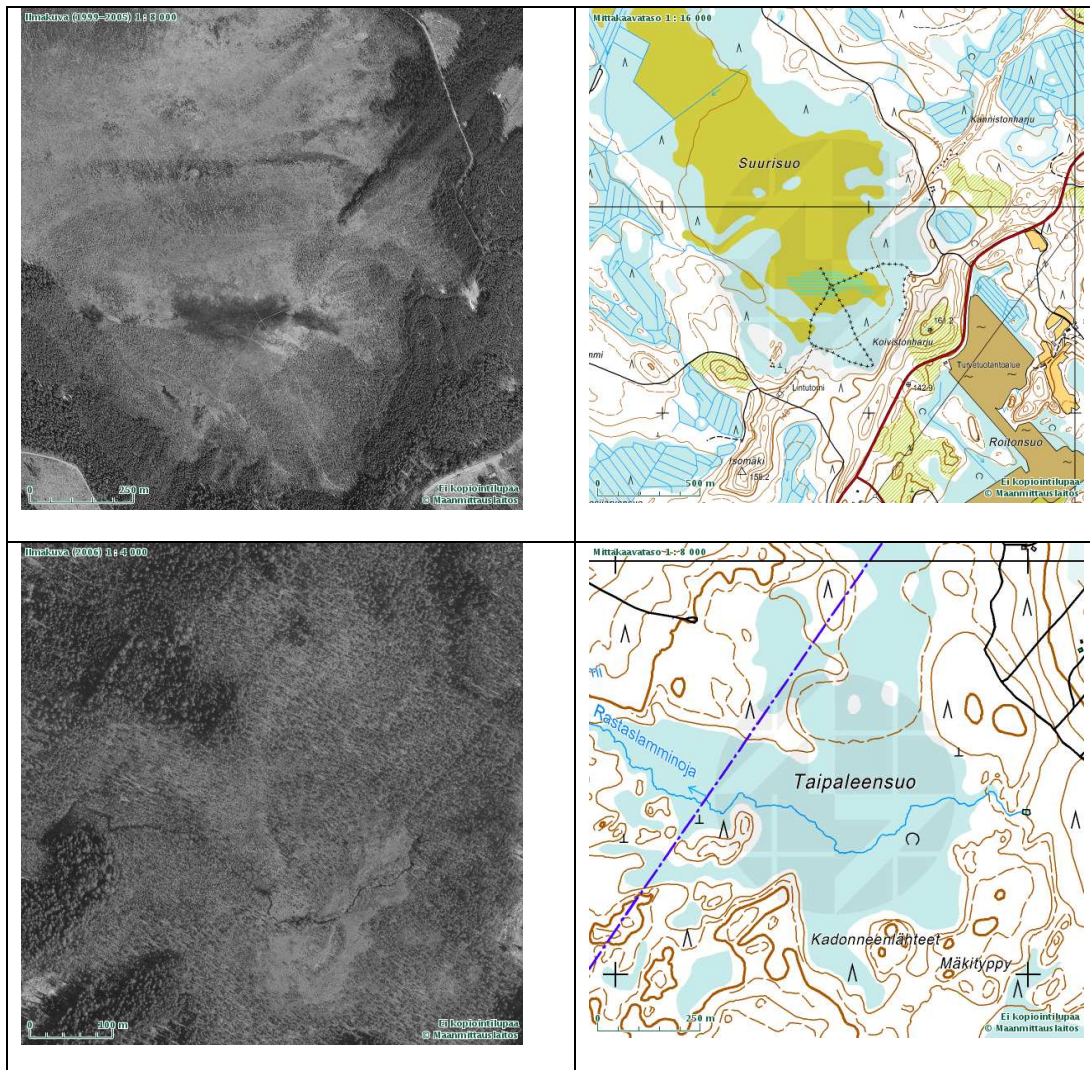


Fig. 4. Location of the International Peatland course sites in Finland.

During the peatland course, an internationally very rare and protected bryophyte species, *Meesia longiseta*, was found in Ylinen Savijärvi rich fen, which is a young mire, paludified as a consequence of lake water level lowering about 200 years ago to obtain hay meadows. The locality was not known earlier, and the population is probably the biggest in the southern half of Finland, altogether about 2 sq. metres.

There was an interest from the side of journalists about the course. Information about it was given in the National TV broadcast (2 minutes, repeated in December in prime time broadcast) and National Radio (8 minutes) and revealed in 3 extensive newspaper articles. The link to the TV news about

Also to be able to take part in a real research project aiming for a publication was valuable, both to the undergraduate and the graduate students. The amount of field work and excursions and the ability of the experts to point out the differences and similarities between the different sites made it possible to make one's own observations and conclusions from the gathered data. Overall, the course was a positive experience.

After the course, the students were given the Certificates.