



Relating fire and humification data in peat bog profiles

Ülle Sillasoo (1), Minna Väliranta (2), Angelika Portsmouth (1), and Margus Pensa (1)

(1) Institute of Ecology, Tallinn University, Tallinn, Estonia (sillasoo@tlu.ee), (2) Environmental Change Research Unit (ECRU), University of Helsinki, Helsinki (minna.valiranta@helsinki.fi)

Fires are one of the main sources of errors, when reconstructing past climate and hydrological changes from the "archives" of ombrotrophic bogs. Fires result changes in bog microtopography, vegetation, hydrology and peat properties. Long term fire frequencies, their effects on peat decomposition and post-disturbance succession of vegetation can be studied using macroscopic charcoal in combination with plant macrofossil and humification analyses. The time and severity of fire events are better determined by comparing macroscopic charcoal and humification data in relevant peat sequences. The ignition of bogs primarily depends on the presence of susceptible vegetation, first of all shrubs and pine trees. Shrubs are also involved in the post-fire recovery of vegetation, having durative impact on the peat formation and humification process. In this paper fire and humification data are studied side by side in c. 5000 years old peat profiles, dated with high-resolution radiocarbon and ^{210}Pb method, from the bogs in Estonia and Finland.