SOCIETY OF WETLAND SCIENTISTS

Mid-Atlantic Chapter – 1st Annual Chapter Meeting
Poster Abstract Submission

The Chapter meeting will kick off with a poster session (Thursday 4-6 PM). Participants are welcome to present on any aspect of wetland science. Student participation in the poster session is especially encouraged. Student posters will be judged. The Mid-Atlantic Chapter will pay the conference fees for the recipient of the best student poster presentation for the 26th annual meeting of the Society of Wetland Scientists, to be held in June 2005, in Charleston, South Carolina. Prepare abstracts following the example given below. The text of your abstract should be no longer than 300 words.

Poster stands provide a display space that is 4 feet tall and 6 feet wide.

E-mail abstracts to: kelman.wieder@villanova.edu

Abstract Deadline Extended to 25 October 2004; 5:00 PM

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Vascular plants, mosses, microbes, water and nutrients: What controls what in boreal peatlands?

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Peat accumulates on the land surface when annual net primary production exceeds annual decomposition and DOC loss throughout the peat column. The rate of peat accumulation in boreal peatlands is thought to be dependent on the rate of input of organic matter into the catotelm and on the slow decomposition in the cold, anaerobic catotelm. These statements, however, provide little mechanistic insight into the processes that collectively lead to peat accumulation and persistence, or into the limitations and controls on such processes. Numerous factors influence moss production (nitrogen, phosphorus, light, water), yet less attention has been given to how mosses themselves influence these potentially limiting factors. Ombrotrophic peatlands are notorious for efficient retention of nutrients in the growing moss layer. Moss species differ in their water holding capability, as well as in their susceptibility to desiccation. Moss species also differ in terms of their organic matter quality (relative abundance of water-soluble materials, phenolics, cellulose, "lignin"), which may exert a strong influence on their own decomposition. We have found that microbial community structure differs dramatically between peatland types (permafrost mounds, ombrotrophic bogs, and "internal lawns," which are areas of recent permafrost melt), as well as with depth within a particular peatland type. Relationships between microbial community structure, nutrient status, decomposition, and peat accumulation remain obscure. To predict how peatlands will respond to climate change, a mechanistic understanding of the interrelationships between mosses, microbes, water, and nutrients is needed.