



## Peat slides and rain fall intensities

Roselyn Carroll and Mike Long

University College Dublin, Belfield, Dublin 4, Ireland (roselyn.carroll@gmail.com)

The objective of this work is to assess the reasons for peat bog slides in upland areas of Ireland and to provide tools for susceptibility assessment of future slides. A case study of a recent peat slide in Ireland will be presented in order to address these objectives. The slide occurred on the 23rd August 2009 north of Glencolmcille, Co. Donegal in an upland blanket bog. The interaction of groundwater, rainfall, and human activities in peat areas are all considered causal factors that impact on the stability of peat. An understanding of these factors combined with the shear strength of peat will help in assessing the risks of peat slope failures. Rainfall from previous years and at the time of the slide, peat shear strength and known human activities at the slide location will be assessed and a description of the slide will be presented. Boylan et al. (2008) noted that the most commonly cited causal factor for peat slope failures was periods of intense or prolonged rainfall.

Basic geotechnical properties of the peat sampled at different depths will be presented. A shear strength profile of peat at the location of the slide will be developed using direct simple shear (DSS) tests. The shear strength results from DSS tests will be implemented in a limit state slope stability model for the slide location so as to back calculate the existing slide and then could be used in a risk assessment of a peat slide.

Boylan, N., Jennings, P. & Long, M. (2008) Peat slope failure in Ireland. Quarterly Journal of Engineering Geology and Hydrogeology, 41(1), 93-108.