

ABSTRACT NO: 325

Hydrological behavior of a raised bog following the damming of a deep and broad ditch

SYLVAIN JUTRAS¹, OLIVIER MARCOUX¹, LINE ROCHEFORT¹

¹) UNIVERSITÉ LAVAL, CANADA

The Plée Bleue bog, located 12 km east of Québec City, Canada, has been identified as one of the few very well preserved, large (10 km²) raised bog in the region. The government of Quebec has therefore decided to buy the large majority of the bog, previously owned by numerous private owners, and to proceed to its long-term protection by giving it the status of a natural reserve. Some important changes had to be made beforehand, especially concerning the presence of a unique but massive ditch in the peatland. Excavated more than 70 years ago, this 3 m deep, 8 m large and 800 m long ditch aimed supposedly the draining of the bog for potential agricultural purposes. No trace of agriculture nor forestry activities were found in the bog even though large dimension larches and birches are now abundant within the first 15 m along the ditch. Water table monitoring is showing a drawdown effect of the ditch over a 25 m large zone. Additionally, the presence of numerous and vigorous trees are suspected to favor the lowering of the water table and the collapsing of the organic soil. In November 2011, six large dimension wood and peat dams were installed along the ditch using mechanical excavators. Numerous water monitoring devices were installed in order to measure the hydrological behavior of the bog. Results from the first seven months of rewetting will be shown.