

## **Long-term vegetation monitoring to assess the restoration success of a mined peatland (Québec, Canada).**

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We present a case study where the vegetation recovery in a cut-over bog is surveyed since 7 years after the restoration. The aim of this presentation is 1) to assess peatland restoration success when using the “paludification-like” approach and 2) to monitor vegetation dynamics in term of recovery and diversity. The peatland of 11.4 ha have been abandoned in 1980 after being mined. An area of 8.5 ha was restored in 1999 by spreading a straw mulching, blocking the drainage ditches, and applying a low dose of phosphorus fertilizer. The vegetation was surveyed by two methods: a point interception method that uses a systematic grid of approximately 6900 points (every 3 m × 5 m) before (1999) and after restoration (2001, 2003 and 2005), and permanent plots which were established and surveyed every year since 1999. Vegetation dynamic in the restored site was compared with vegetation in an adjacent non-restored site and natural reference peatlands. The sphagnum carpet was more than 50 times higher in the restored than in the non-restored site (frequency of occurrence) in 2005, which was also close to the reference ecosystem. Sphagnum diversity rose to 12 species. The cover of other mosses such as *Polytrichum strictum* was two times more abundant in the restored site than in the reference ecosystem in 2003 but slowly decreased since 2005. The herbaceous stratum was also higher than in natural peatlands and 55 species were found in 2003; but we expect a decrease of the main species *Eriophorum vaginatum* (cotton-grass) with time. Overall, the dry surface restoration approach appears to be efficient for successfully re-establishing plant cover diversity on cut-over bogs. Discrepancies between the two survey techniques will be discussed for vegetation strata and particular species.