

KNOWLEDGE TRANSFER FROM SCIENTISTS TO STAKEHOLDERS: PROMOTION OF RESPONSIBLE PEATLAND MANAGEMENT FOLLOWING PEAT EXTRACTION

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SUMMARY

According to the *Strategy for responsible peatland management*, “After-use plans of peatlands used for peat extraction (...) should include best practice measures for the restoration for an optimal range of biodiversity and ecosystem services “. Best practice measures are mostly based on state of art scientific researches and often evolve as new results help the understanding of the system in restoration. However, scientific knowledge is not always easily accessible for stakeholders such as the peat industry, government instances and the general public which directly deal with restoration of peatlands. This presentation aims at presenting the Peatland Ecology Research Group (PERG)’s strategy to transmit and popularise scientific knowledge about peatland restoration. Two guidelines recently produced by the PERG, *Literature review on the impacts of peatland drainage and rewetting techniques* and *Tree plantation on residual peat in the context of ecological restoration: a practical guide* will be briefly presented. The presentation will outline the importance of knowledge transfer from scientists to stakeholders to promote the responsible development of Canadian peatlands. The effectiveness of the different approaches of communication tested by the PERG will be also discussed and contrasted.

KEYWORDS: Communication, Knowledge transfer, peatland restoration, responsible management, stakeholders.

INTRODUCTION

According to the *Strategy for responsible peatland management* (IPS 2010), “After-use plans of peatlands used for peat extraction (...) should include best practice measures for the restoration for an optimal range of biodiversity and ecosystem services”. Best practice measures should be based on state of art scientific researches and should evolve at the same time as scientific knowledge increases. First restoration efforts in North America are recent (1990s) and techniques have improved greatly as scientific experiments helped understanding the system in restoration. Researches performed by the Peatland Research Ecology Group (PERG), grouping researchers from all across Canada in partnership with the Canadian Sphagnum Peat Moss Association (CSPMA), led to the development of a restoration technique for North-American ombrotrophic peatlands (bogs) called the “moss layer transfer technique”. It consists in mechanically collecting the top layer of vegetation of a natural peatland (donor site) to spread it on a cutover peatland (in a 1:12 ratio). Vegetation fragments are protected with a straw mulch and drainage ditches are blocked in order to ensure proper

conditions for the growth of sphagnum mosses (Quinty and Rochefort, 2003). Results from ten years after the application of this technique, show the recovery of plant communities dominated by species typical of ombrotrophic peatlands (Poulin *et al.*, this volume), and the initiation of the function of accumulation of carbon (Lucchese *et a.*, 2009).

Diffusion of the latest scientific knowledge is traditionally done throughout technical papers published in specialized scientific journals or by presentations in scientific conferences. The target audience is mainly scientists who possess a strong background in the field. These diffusion channels are thus available only to a restricted amount of people and are not easily accessible for stakeholders involved in peatland restoration such as the peat industry, government instances and the general public. In scientific papers, results are generally presented in a hermetic language dedicated to an “informed audience” which possesses background knowledge concerning ecology and statistics. Furthermore, practical applications and implications of the results are only seldom presented. For it to be applicable and understandable by a wide range of stakeholders, scientific results need to be synthesized, popularise and practical application of the results must be clearly presented. The effective transmission of knowledge concerning the “moss layer transfer technique” is crucial for peat producers because it contributes to improving the corporate image of the industry and reducing exploitation costs.

Over the last year, the PERG tested different strategies to transmit and vulgarize scientific knowledge about peatland restoration :

Production of technical guides : The moss layer transfer technique is described in a guide entitled *Peatland restoration guide* (Quinty and Rochefort, 2003). Additional practises to increase the biodiversity of restored peatlands are presented in the three following works: *Production of berries in peatlands* (PERG 2009), *The drainage of peatlands: impacts and rewetting techniques* (Landry and Rochefort, 2011) and *Tree plantation on residual peat in the context of ecological restoration: a practical guide* (Hugron *et al.*, 2011). These guidelines are dedicated to restoration practioners and contain numerous tools intended to facilitate the transmission of knowledge such as flow chart to facilitate decision-making, tables and figures to synthesize and popularise information, etc.

Excursions are often organized to visit restored sites. The goal of these excursions is to raise public awareness about peatland restoration in Canada. The ecological services peatlands can bring to the society, impact of peat extraction and restoration techniques are the main subjects addressed by the guide (usually, a member of the PERG) during the visit. Unfortunately, guided excursions are time consuming for the research team and as research stations can be far from the headquarters, the PERG recently developed a new concept for the visit of restored sites: self-guided tours. Flyers, including a map of the different stops to make along the path, were produced for one large-scale restored site in Canada and one experimental station of sphagnum farming.

Finally, **technological transfer workshops** were also organized to bring together members of the research teams, peat producers, governments and private firms. The goal of these one or two day workshops is to provide an overview about a particular problematic dealing with peatland restoration. During these workshops, researchers present most recent results of their studies, round tables are organized to facilitate exchanges between academics and practitioners and field demonstration are organized. The most recent workshops organized were dealing with the application of moss layer transfer technique (2010 and 2007) and rewetting of drained peatlands (2009).

DISCUSSION

Effectiveness of the different means of knowledge transfer was not evaluated quantitatively, but in an informal manner that included personal observations and testimonies. Guidelines and self-guided tours present the advantage of being accessible to a large number of people. However, it has been judged that “in person” communication of knowledge (through technological transfer workshops and excursions) was more effective than the production of written material. On-site demonstration was particularly effective for the understanding of the concepts of restoration. Guidelines were particularly useful to complement and consolidate the learning done in the workshop as it can be consulted later by participants. In conclusion, effective knowledge transfer from the research team of the PERG directly to the peat producers is one of the key factors that contributed in reducing the restoration cost in Canada to a level that is among the lowest throughout the world.

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