Michael J. SIMPSON* and Dr. M.R.T. DALE Department of Biological Sciences, University of Alberta, Edmonton, Alberta

Factors affecting the establishment and growth of boreal feather mosses during post-fire succession

The rarity of boreal feather mosses for several years after a forest fire is assumed to be due to a combination of unsuitable substrates, exposed conditions or low dispersal ability. However, empirical evidence on the relative importance of these factors is lacking. In a field experiment I compared the establishment potential and growth of vegetative propagules of two feather mosses, *Pleurozium schreberi* and *Ptilium crista-castrensis*, on ash, burned mineral soil and burned moss, and on unburned humus (on which they typically grow). Fragments were sown on pots placed in a late-successional white spruce stand in June, 2004, and recovered after 3 months. For both species, establishment potential and growth were relatively low on ash. *Pleurozium* fragments tended to grow more on humus, but differences were not always significant. Trends for *Ptilium* were less clear. Overall, there was little difference in the establishment potential of the study species on any given substrate. These results suggest that high ash cover might inhibit growth of feather mosses in the short term, but substrate might be less important than exposure and dispersal in determining the species composition of boreal moss communities at different stages in succession.