
Article:
Van Bellen, S, Garneau, M, Baird, A orcid.org/0000-0001-8198-3229 et al. (2 more authors) (2018) Exploring pathways to late Holocene increased surface wetness in subarctic peatlands of eastern Canada. Quaternary Research, 90 (1). pp. 83-95. ISSN 0033-5894

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Figure 1: Laforge peatland reconstructed water tables since 4000 cal yr BP, pooled in 200-year bins. Boxes represent medians, upper and lower quartiles and outliers.

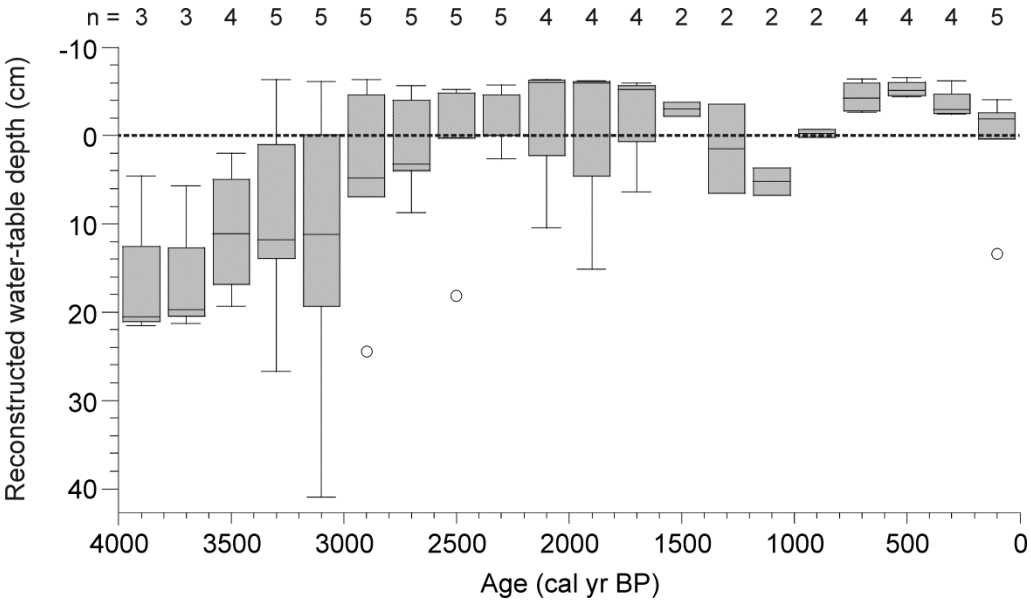

Figure 2: Bioclimatic positioning of patterned fens and documented aqualyzed peatland regions. Left: position of the Laforge region, Monts Otish region (1), Plateau du lac du Sable region (2) and the Foster et al. (1988b) patterned fen region within the Quebec 'climate space', as defined by annual precipitation and growing season cumulative shortwave radiation values. Each point represents a spatial unit for which climate data were available, with points marked according to the vegetation distribution from Payette and Rochefort (2001). Right: location of the patterned fen regions in Quebec. The approximate southern limit of peatland permafrost features (palsas) is based on Payette and Rochefort (2001).

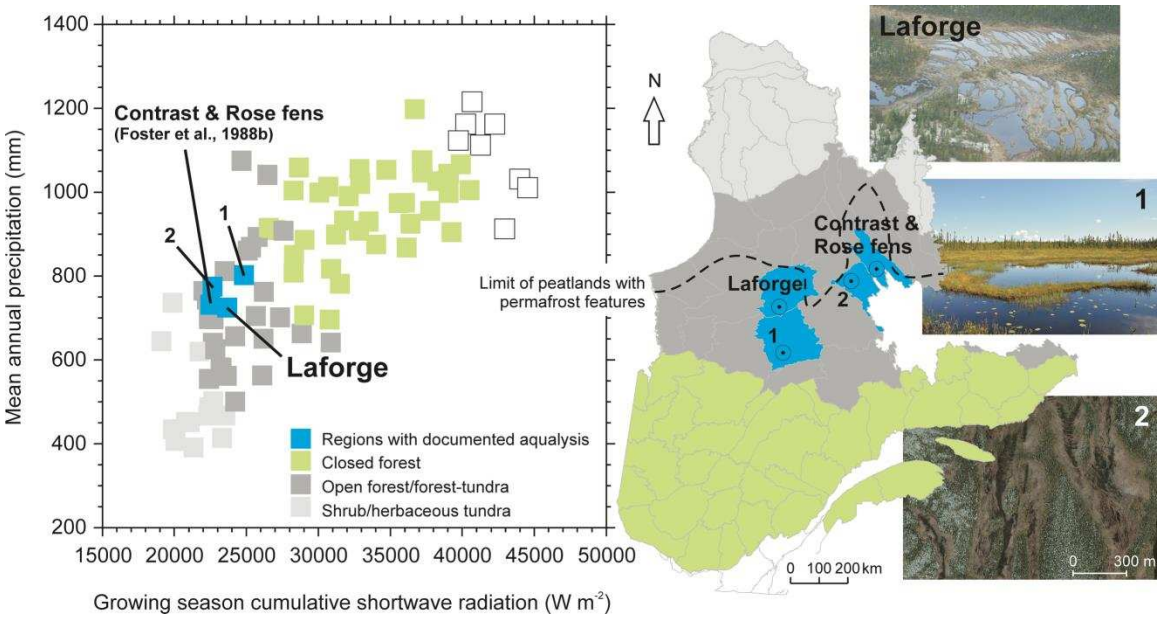

Figure 3: Age-depth model, C density and C accumulation rate reconstruction for Abeille-5. The apparent increase in vertical accumulation near the surface represents the acrotelm, characterized by ongoing oxic decay.

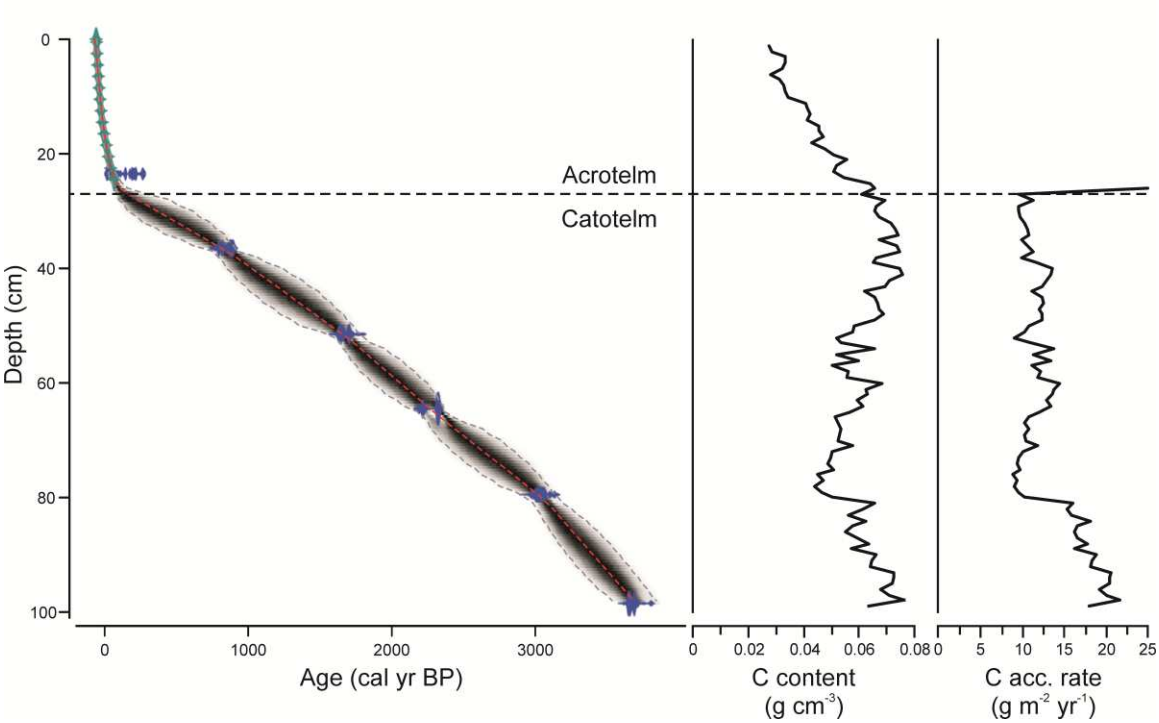

Figure 4: Variations in testate amoeba assemblages, inferred water-table depths, main plant macrofossils and peat physical characteristics along the Abeille-5 core. Period A represents an initial, non-persisting increase in water-table levels while period B shows a persisting water-table rise (aqualysis) with testate amoeba assemblages and plant macrofossils suggesting surface inundation.

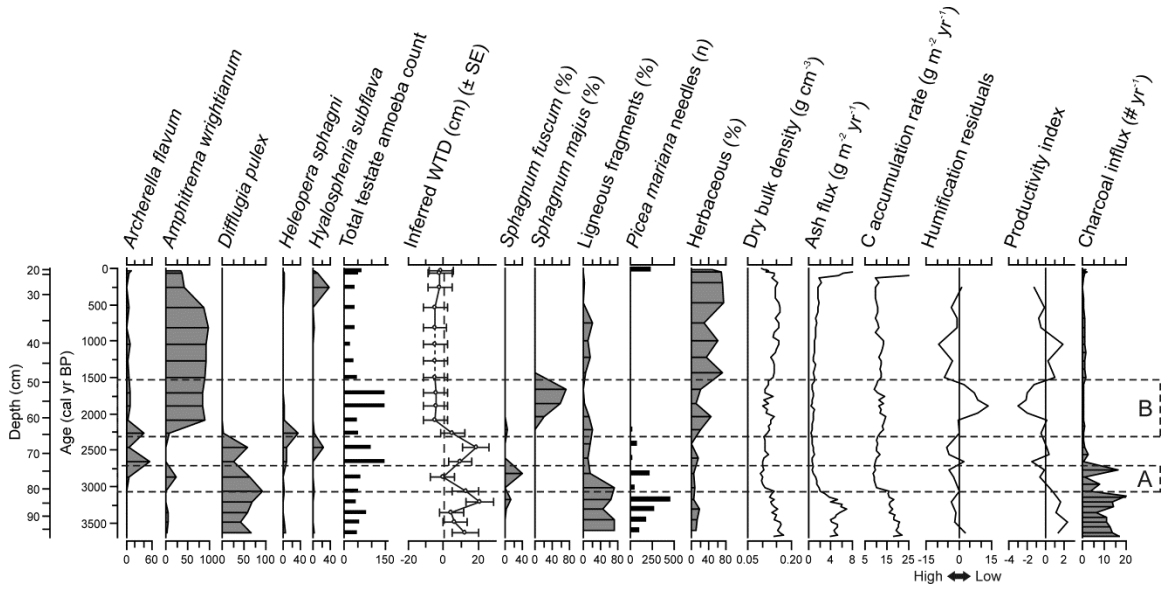

Figure 5: Conceptual model scenarios, DigiBog output and visual representation of ecosystem processes. The ecosystem dynamics resulting from model output, shown at the right, were not specifically modelled but represent interpretations of the trends. For instance, the '+' sign indicates increased minerotrophy from enhanced catchment water inflow in scenarios 4 and 5. This inflow was not explicitly modelled but was represented by a reduced lateral loss of water from the peatland.

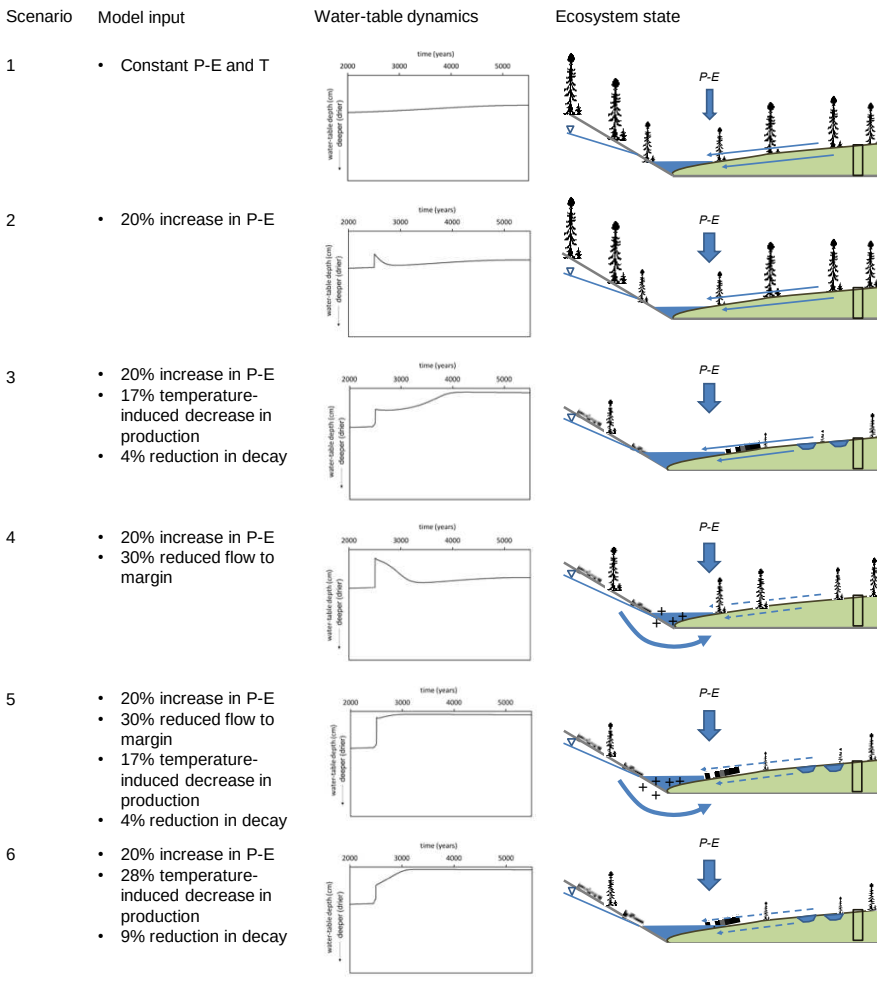

Figure 6: Ecohydrological, C accumulation rate, charcoal influx, *P. mariana* needle abundance and humification records from Abeille peatland combined with climate reconstructions from northern Quebec (Viau and Gajewski, 2009). Temperature and precipitation records are expressed as anomalies. Climate reconstructions were obtained from Viau and Gajewski (2009) and the precipitation–temperature residuals of z-scores were recalculated from their published records.

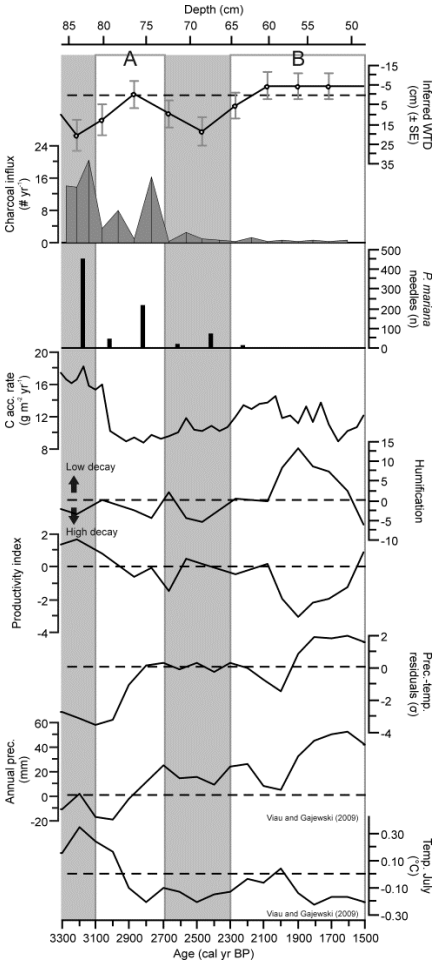

Figure 7: Processes contributing to aqualysis. Inflow from the catchment to the peatland margin, also impeding drainage from the center to the margin of the peatland, may have contributed to the increase in minerotrophy and aqualysis.