
**Environmental Evolution of the
Pleasant River Wetland, Nova Scotia**

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Wetlands constitute an important terrestrial sink for carbon. A decrease in productivity or change in groundwater regime will affect this sink and a net release of greenhouse gases could result. As well, wetlands in Nova Scotia provide habitat for several rare, disjunct species, most notably the Blanding's Turtle. The survival of these species may be dependent on the stability of these environments. In our study we are attempting to determine if the Pleasant River Fen has responded to known climate change events, in particular Late Holocene (Neoglacial) cooling.

The Pleasant River Fen is located in southwestern Nova Scotia near Kejimikujik National Park. Sediment depth was measured by probe and sonar, and was highly variable (> 6 m) and dominantly organic. A 4 m long vibracore sample was analyzed for lithostratigraphic proxies including loss on ignition

(LOI) and magnetic susceptibility (MS). Wood at the base of the core provided an AMS date of 9060 ± 70 ^{14}C yr BP. MS values were consistently low indicating low clastic influx. LOI values varied with depth however values in excess of 60% occurred near the base of the core.

A transition in lithostratigraphic properties at 126 cm depth (~ 3000 ^{14}C yr BP) is coincident with the onset of modern moist cool climate as recorded in other records. The lithostratigraphic transition appears to represent a shift to a wetter environment possibly associated with a rising water table. The upper 40 cm of the core (300 BP – Present) exhibits much lithostratigraphic variability which appears related to human activity (fire, water level management) in the region. The results of this study indicate the Pleasant River Fen has evolved significantly in response to past environmental change. Future climate change has the potential to further modify this environment.