

Northeastern Section - 42nd Annual Meeting (12–14 March 2007)

Paper No. 42-3**Presentation Time:** 1:00 PM-4:45 PM**POST-GLACIAL LAKE SEDIMENT RECORDS FROM
NORTHEASTERN VERMONT, USA**

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Continuous sediment cores were retrieved from two ponds in Brighton, Vermont in order to reconstruct the post-glacial climate of this area. Both of these ponds, Beecher (373 m asl) and Nulhegan (352 m asl), are located within the Nulhegan Basin, a prominent topographic lowland underlain by a quartz monzonite pluton. The ponds are located less than 4 km apart, and both feature simple bathymetry, maximum depths of ~4 m, minor inflow and outflow, and shorelines densely vegetated by bog and boreal forest vegetation. Sediment was retrieved with a 2-in diameter Livingstone corer operated from the ice surface; overall, more than 10 m of sediment was collected in the two cores. Based on AMS radiocarbon dating of terrestrial macrofossils, the record for Beecher Pond extends from ~11,200 cal yrs BP to ~770 cal yrs BP, with a sedimentation rate of 0.44 mm/yr. A wood fragment from a depth of 40 cm in the Nulhegan Pond core returned a date of 1100 cal yrs BP. Most LOI values for the two lakes range from 35 to 45%, with a general increase over time. Both records also feature dramatic transient departures to higher and lower LOI values. The fluctuations consist of steadily rising or falling values that abruptly shift to trend in the opposite direction. This characteristic, and the sedimentation rate determined for Beecher Pond, suggest that the LOI fluctuations track changes in the amount of organic matter accumulating in the lakes over centennial timescales. If LOI is considered a proxy for aquatic productivity, then these records reveal notable variability in the post-glacial period. Future work will investigate the possible synchrony of these changes between the two lakes, and with climatic variability noted in previous paleoclimate studies from the region.

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Session No. 42--Booth# 38

[Glacial and Postglacial Environments on the Frontier: Quaternary Studies in the New England-Canadian Border Region \(Posters\)](#)

University of New Hampshire: Holloway Commons, Rotunda
1:00 PM-4:45 PM, Tuesday, 13 March 2007

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