

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

Paper No. 17-5**Presentation Time:** 2:25 PM-2:45 PM**GLACIAL GEOLOGY OF THE NULHEGAN BASIN AREA,
NORTHEASTERN VERMONT, USA****MUNROE, Jeffrey S.**, Geology Department, Middlebury College, Bicentennial Hall, Middlebury, VT 05753,
jmunroe@middlebury.edu

The Nulhegan Basin of northeastern Vermont records a complicated deglacial history, including evidence for the coexistence of stagnant and active ice, and possible post-glacial lake development. Field and air-photo investigations have outlined the following 4 stages: 1) Last Glacial Maximum, thick ice over the area flowed S30E, inundating all summits. 2) During deglaciation, ice thinned and topography deflected ice flow S50E, towards the lowest point in the basin rim as evidenced by cross-cutting striations and erosional streamlining of higher summits. 3) During the final stages of deglaciation, active ice continued to flow S50E across the eastern sector of the basin, depositing lodgement till beneath sandy supraglacial sediment. In contrast, ice stagnated in the lee of Bluff Mountain in the western sector of the basin, producing a complex topography of hummocks and locally stratified ice-contact deposits. Eleven discrete meltwater channels stepping from 575 m to 460 m on a hillside northwest of the basin record the progressive lowering of the ice surface at this time. Meltwater in these channels likely fed a laterally continuous esker on the floor of the Pherrins River valley. 4) Active ice flow in the basin likely ceased soon after the Littleton-Bethlehem readvance ~14 ka BP (Ridge et al., 1999), and residual stagnant ice may have persisted even after organic sedimentation began at the Columbia Bridge site ~13.7 ka BP (Miller and Thompson, 1979). However, an extensive sand deposit at 360 m asl on the northeast side of Notch Pond Mtn. suggests that water may have been temporarily impounded within the basin after deglaciation, possibly behind a drift dam near the pronounced knickpoint at the head of the modern Nulhegan River gorge. Drainage of this lake would have been westward through Island Pond into the Clyde River. 5) By 11.2 ka BP organic sedimentation began in Beecher Pond, which formed over a buried ice block in the western basin.

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[Glacial and Postglacial Environments on the Frontier: Quaternary Studies in the New England-Canadian Border Region](#)University of New Hampshire: Holloway Commons, Squamscott
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