

2003 Seattle Annual Meeting (November 2–5, 2003)

Paper No. 127-9

Presentation Time: 1:30 PM-5:30 PM

SUBSURFACE INVESTIGATION INTO THE INTERNAL ARCHITECTURE OF LACUSTRINE STRANDLINE DEPOSITS, NORTHERN NEW YORK

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The retreat of the Laurentide Ice Sheet from the St. Lawrence Lowlands approximately 12,500 yr. B.P. and an ice-blocked outlet near Covey Hill, Quebec led to the development of Glacial Lake Iroquois, in which the water-covered lowlands were continuous with the Lake Ontario basin. Fluctuations in this former water body left evidence for four significant lake stages, as defined by numerous strandlines of well-sorted delta and beach deposits in areas of New York north of the Adirondack Mountains. Owing to post-glacial base level declines, these deltas are now deeply incised by the very rivers that formed them. Ground penetrating radar (GPR) surveys were conducted across the remnants of several deltas of different lake stages, in an attempt to map their internal architecture, depositional environment, thickness, and indications of minor base level changes. Utilizing 50 and 100 MHz antennas, delta thicknesses vary but are generally between 10 to > 20 m. High-resolution (GPR) profiles exhibit variable reflector continuity, and are interpreted as showing the facies of shifting channels, top set, foreset and bottom set bedding, along with erosional unconformities and potential failure planes. A significant number of large boulders are interpreted to be present within the deltas, suggesting either a dropstone or high-energy origin. Preliminary interpretation suggests that the deltas of Glacial Lake Iroquois may have subject to significant reworking through waves or fluctuating water levels. These stranded deltas are well drained and easily accessible, making them ideal sites for GPR surveying.

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Session No. 127--Booth# 211

[Advances in Stratigraphic Analyses Using Ground Penetrating Radar \(Posters\)](#)

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