Surficial geology of the Nepisiguit Lakes and California Lake areas, Miramichi Highlands, northern New Brunswick

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Surficial mapping (1:50,000 scale) and sampling of B-horizon soil, basal till and 100 pebbles at each of 406 sites on a 2 km grid is ongoing in NTS 21 O/7 & 8. Till is analyzed for Au + 33 elements, and selected base metals.

A till fabric, 264 pebble counts and 486 striae, groove and roche moutonnée measurements indicate an erosive eastward ice movement followed by northeastward and southeastward flowing ice. Lastly, ice flowed in various directions off the Highlands. This is consistent with other areas mapped to the north and south. Periglacial features, suggest that the highest elevations may have been exposed as nunataks during early stages of deglaciation. Granite-boulder erratics from the Mount Elizabeth Intrusive Complex in the center of the area were transported up to 30 km down-ice in an east-northeast direction. No Canadian Shield erratics have been found.

A Late Wisconsinan homogeneous basal till (<2 m) throughout the area and erratic pebbles in till on the highest elevations suggest that all of the area was glaciated. Till is locally derived. Till thickness increases to the east, as elevations decrease and topography becomes gently rolling. Ablation till and ablation lag over basal till are found in valleys and topographic depressions.

Major rivers and brooks contain glaciofluvial (outwash and ice-contact), and postglacial alluvial deposits. Pre-glacial weathered granite (grus); colluvium and bedrock, dominate in steep valleys and on mountains and ridges.