Glacial dispersion of clast lithologies: Lake George area, New Brunswick

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Dispersal patterns of specific clast lithologies in the 3-8 cm size-fraction of till were investigated over a 532 km^2 area in the Lake George area of southwestern New Brunswick. In the northwest portion of the study area till is underlain by the Pokiok Batholith; granites intruded by small aplite dykes. A sharp diagonal contact separates the granite from greywacke occupying the southeast portion of the study area. Greywacke also occurs outside of the study area, to the north and west of the Pokiok granite. Samples were collected on a 2 km grid from late Wisconsinan age sediments during surficial mapping for the New Brunswick Department of Natural Resources and Energy. Multivariate analysis was performed on 100 till samples.

Southeastward-trending dispersal plumes can be distinguished over distances of 14 km for aplite erratics. The dispersal plumes are elongated towards the southeast and parallel directions of local striae (140°-180°). Clast percentages of granite and greywacke are inversely correlated (r_s =

.7). These observations support a model for lithologic diffusion of glacial load in response to incorporation of these units as the glacier flowed southeastward and south across the area. Along the Saint John River valley, the earliest and most prominent directions are southeastward, which may be indicative of topographic influences on thinner ice. Much of the surficial cover is the result of ablation and glaciofluvial processes associated with later glacial stagnation. Future drift prospecting programs relying on analyses of the clast-size fraction of basal till, will require close sample-spacing and accurate identification of till facies.