

and plotted on maps to compare with a larger study of regional till geochemistry and till clast dispersal.

Silver, Cd, Hg, Mn, Pb, and Zn were the only elements that demonstrated significantly higher mean concentrations in the humus samples, relative to samples from the underlying till. This is attributed to the greater capacity of humus to adsorb cations and/or form complexes with some elements, relative to the clay size-fraction of the till matrix. Humus element concentrations were not consistently correlative with maximum or minimum concentrations found in the underlying till. Concentration patterns plotted on areal maps for Ag, Cd, Hg, Mn, Pb, and Zn in humus were larger than those exhibited by the dispersal patterns for till matrix analysis. While forming a larger exploration target than that recognized by the till analysis, the humus elemental concentration patterns did not delineate a point source similar to the typical elongated or fan-shaped dispersal patterns commonly found using till geochemistry or till clast concentrations.

As humus has the ability to concentrate elements from the underlying substrate it can be a suitable sample material when conducting reconnaissance surveys to delineate areas for further exploration. However, as a third derivative sediment (bedrock to till to groundwater and vegetation), humus does not always reflect directly the underlying mineralized source, nor does it give a reliable indication of ice-flow direction. It is likely that humus analysis is of most benefit to mineral exploration when used as a preliminary stage of assessment, preceding routine till clast and geochemical sampling.

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**Humus as a sampling medium for  
mineral prospecting in glaciated areas:  
an example from the Popelogan Lake  
area of northeastern New Brunswick**

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A total of 109 samples were collected from both humus and till overlying Cu-Mo skarn occurrences in the Popelogan Lake area of northeastern New Brunswick. Till matrix and humus samples were analyzed for a total of 39 different base metals, trace, and rare earth elements. These data were compared by statistical correlation for samples taken from till and humus at the same sites