
Summary of the Nova Scotia component of the North American Soil Geochemical Landscape Project

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The objective of the North American Soil Geochemical Landscape Project (NASGLP) is to establish a continental framework of inorganic, organic and microbiological soil geochemical data and to ensure the data are available to a wide range of applications, issues and disciplines. The project is a tri-national initiative that involves the co-operative efforts of the federal, provincial and state geological surveys of Canada, the United States and Mexico, and will result in the first-ever continental-scale map of the geochemistry of North America based on 13,215 sample sites yielding an overall sample density of 1 sample per 1600 km².

All sampling protocols, including (1) identification of the various soil horizons to be sampled, (2) the type, number and size of samples to be collected, (3) the type and proper use of accepted sampling equipment, (4) laboratory preparation and (5) analytical procedures were designed by the Geological Survey of Canada in conjunction with numerous partners, including the National Forestry Service, Agriculture Canada and Health Canada.

The 2007 field season began in early June with a one week field orientation program in the Amherst area to introduce the Nova Scotia sampling team to the field equipment, sample data sheets and identification of the various soil horizons to be sampled. Fifty-four sites across the province were sampled (and three field duplicates were collected for a total of fifty-seven samples). All samples were collected by shovel from hand-dug

pits averaging approximately 90 cm in depth. Detailed field descriptions including sample depth, colour, redoximorphic features, texture, clast type/percentage and root size/quantity were recorded for each site. A digital photograph of the site was taken and annotated for future reference. Sample sites were geo-referenced (NAD 83) by GPS to the Universal Transverse Mercator (UTM) grid (Zone 20).

In addition to collecting soil samples for geochemical analysis, measurements of (1) soil gas radon, (2) radiometrics (U, Th, K, and Total) and (3) soil permeability were also collected at each site. Soil samples were also collected to determine bulk density and/or moisture content.

Analytical results are expected in the spring of 2008. Funding for the project was provided by Natural Resources Canada (Geological Survey of Canada) and Health Canada.