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**Living with our legacy: mapping patterns of high soil-lead  
in St. John's, Newfoundland**

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A pilot study to investigate the metal content of urban soils in St. John's, Newfoundland, was carried out in the summer and fall of 2003. The study was prompted by results of a geochemical analysis of sediments in urban lakes in St. John's that indicated historically high levels of lead and other toxic metals. Although lead levels in the sediments had declined over the last several decades, primarily due to the removal of lead from gasoline, the possibility that urban soils had accumulated a reservoir of toxic metals remained untested. Our project is ongoing, and further sampling and analysis are planned to adequately delineate patterns and sources; however, interim results provide some preliminary indication of the controls on soil lead in St. John's. The results from 383 samples range between 17 and 7048 ppm, with a median value of 264 ppm. Background levels were measured between 18 and 48 ppm, with a mean of 29 ppm. The Canadian Council of Ministers of the Environment (CCME) guideline for soil lead in residential areas is 140 ppm.

Examination of the spatial distribution of soil lead clearly indicates a concentration around the urban core of St. John's. For instance, suburban residential properties had a median soil-lead value of 165 ppm compared to 1076 ppm for urban residential properties. These high values for downtown St. John's are 8 times the CCME guideline. It is also important to note that high values exceeding the CCME guideline also occur on suburban properties close to older roads and houses. Although lead-based paint and coal-ash residue likely were major sources in residential settings, leaded gasoline contributed to high values next to major roads.

St. John's is an old city, with a long history of coal burning and vehicular traffic and a tradition of painted clapboard houses. The legacy of these activities appears to be high soil-lead levels. Considering the implications of lead for human health, especially young children, it is important that we understand the distribution of soil lead in our living environment and take precautions against inadvertent exposure.

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