

A Proposed Continental-Scale Soil Geochemical Survey of North America. (S02-smith931330-poster)

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Abstract:

In 2003, the U.S. Geological Survey (USGS) and the Natural Resources Conservation Service (NRCS), in partnership with agencies in Canada and Mexico, began an effort to study the feasibility of conducting a new soil geochemical survey of North America. This undertaking is being considered because the most-often-quoted data set for background concentrations of metals and other trace elements in soils of the conterminous United States consists of only 1,323 samples collected during the 1960s and 1970s by the USGS. Samples were collected from a depth of about 1 ft, primarily from noncultivated fields having native vegetation, and analyzed for more than 40 elements. The only other national-scale soil geochemical data set for the conterminous United States was generated by the NRCS and contains 3,045 samples of agricultural soil collected from major crop-producing areas. These samples were only analyzed for five elements. These two national-scale databases are inadequate to address the increasing number of questions posed by the risk assessment and regulatory community, health scientists, land managers, as well as soil scientists and earth scientists. In addition, neither Canada nor Mexico has a national-scale soil trace-element geochemical database. Recommended protocols include determination of parameters such as bioavailability, selected organic compounds, and microbial characterization. Pilot studies, of 2-3 year duration, to test the protocols will begin in late 2003.

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