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## Project Update: Arthropod fauna of soils

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The Survey has long recognized the great importance of the very inadequately known soil fauna in maintaining the fertility of Canadian soils. However, the taxonomic resources available to remedy deficiencies in knowledge are too limited to support an active project. Instead, the Survey has commented on the need for additional expertise and study in this area, while monitoring relevant developments. For example, the ecological roles of the arthropod fauna of the soil and the current state of knowledge of Canadian soil arthropods were outlined in 1982 [Marshall, V.G., D.K. McE. Kevan, J.V. Matthews, Jr., A.D. Tomlin. 1982. Status and research needs of Canadian soil arthropods. A brief prepared by the Biological Survey of Canada (Terrestrial Arthropods). *Bulletin of the Entomological Society of Canada* 14(1), Suppl. 5 pp.]. Two years later, an international conference on faunal influences on soil structure was held (establishing contact between pedologists and soil zoologists) and the proceedings published [Spence, J. (ed.) 1986. Faunal influences on soil structure. *Quaestiones Entomologicae* 21(4): 371.1-700 (1985)]

Interest in soil fauna remains high in the scientific community, and increasing numbers of graduate students recently have entered the field. Moreover, societies such as the Soil Ecology Society (which in 1994 helped to launch the "Journal of Applied Soil Ecology" for multidisciplinary studies) are active. Several meetings arranged by that society and other organizations have addressed aspects relevant to soil arthropods. Recent relevant conferences, sections, symposia or workshops include: Functional significance and regulation of soil biodiversity (Soil Ecology Society, 1993), Integration of above- and below-ground communities; the importance of soil biota and processes to above-ground ecosystem maintenance and development (Soil Ecology Society, 1995), Quaternary paleobiology, using oribatid mites (New York State Geological Association,

1993), Soil mites (International Congress of Acarology, 1994), and Soil biodiversity: its importance to ecosystem processes (UK/US Workshop, 1994).

Farmers, conservationists, other non-specialists, and those interested in subjects as diverse as climate reconstruction and restoration management are anxious to learn in more detail about the soil microfauna, an interest that is linked to calls for sustainability from Federal and Provincial departments of agriculture and environment. Biologists and soil scientists also have become more aware of the values of soil biodiversity, and the potential role of soil organisms as indicators. In particular, they have recognized the fact that much more *taxonomic* expertise, as well as closer communication and linkages between taxonomists and ecologists, is needed to make progress in understanding the soil fauna.

To further this interest, the Survey's brief on Status and Research Needs on Canadian Soil Arthropods is being revised and updated. In this way, we hope to encourage awareness and collaboration among those working on soil arthropods. In addition, a potentially receptive audience can be better informed about the value of soil biodiversity and the state of knowledge of the arthropod fauna of soils.

