

JOHN ALAN HEGINBOTTOM (1943–2022)

John Alan Heginbottom was a Canadian geomorphologist specializing in permafrost distribution and permafrost landforms. He was born on 18 February 1943 in Bridgend, Glamorgan, Wales, the son of Tom and Ruth Heginbottom. After obtaining a BSc in geography and geology from King's College, University of London, in 1964, Alan (as he was known) emigrated to Canada and began graduate studies in geography at McGill University. He was awarded an MSc in 1967 with his thesis concerning the geomorphology of gullies at the edge of the Canadian Shield north of Montreal. In 1968 he joined the Geological Survey of Canada (GSC) in Ottawa and remained there until retiring in December 1995, then continuing as an emeritus scientist until December 2006. Apart from a two and a half-year spell as executive assistant to the director general of the Sedimentary and Cordilleran Geoscience Branch, Alan spent his career at GSC undertaking and supervising research in surficial geology and surface processes, with particular emphasis on permafrost regions. After 2006, Alan was active as a consultant in the fields of permafrost, Arctic geomorphology, natural hazards, and environmental assessment.

At the start of his career, Alan compiled surficial geology maps for parts of British Columbia, but he soon transferred his interests to Arctic Canada, working in the Yukon, Northwest Territories (NWT), and what is now Nunavut. His research particularly focused on issues of mapping the distribution and characteristics of permafrost, especially its ground ice content. He was the lead author on the extant official map of permafrost in Canada (Heginbottom et al., 1995) and was the Canadian co-author of the International Permafrost Association's circum-Arctic map of permafrost and ground ice (Brown et al., 1997), a seminal synthesis that has been cited more than one thousand times. He led work to create maps at smaller (i.e. more detailed) scales for parts of the Yukon and NWT where topography, climate, and Quaternary history significantly influence permafrost distribution and ice content (Heginbottom and Radburn, 1992). He was a co-author on northern hemisphere estimates of permafrost area and ground ice volume, papers that have also been widely recognized (Zhang et al., 1999, 2000). He thought deeply about the cartographic challenge of portraying permafrost, by its nature an invisible phenomenon and one that has variable contiguity (Heginbottom, 2002).

In addition to his mapping research, Alan was an author or co-author on papers concerned with a wide range of topics, including retrogressive thaw slumps, terrain sensitivity, ground ice distribution, and snowmelt hydrology. Most of these appeared in government publications, such as the GSC reports of activities and bulletins. He also wrote a number of synthesis chapters and entries for encyclopedias on permafrost environments. He co-edited and wrote sections of an important guidebook for a lengthy field trip from Dawson along the Dempster



Alan Heginbottom in 2011.

Highway to the Mackenzie Delta held in association with the Fourth International Conference on Permafrost in Fairbanks, Alaska (French and Heginbottom, 1983). In spite of the nearly 40 years since its publication, this field guide remains a highly readable synthesis of permafrost conditions as they existed along this long route through the discontinuous and continuous permafrost zones to the Arctic coast. In 1997–98 he participated in a project, led by Dr. Kirsty Duncan (then of the universities of Windsor and Toronto), to recover remnants of the Spanish influenza virus from victims of the 1918 pandemic buried in Svalbard. It was hoped that the caskets had been buried and had remained in frozen ground, thus favouring preservation of the virus, but this proved not to be the case (Duncan, 2003).

Alan played a significant role in the organisation of permafrost science and engineering in Canada and internationally during the 1980s and 1990s. He helped in the formation of the Canadian National Committee for the International Permafrost Association (CNC-IPA) and was its secretary from 1995–98. He also served as secretary (1993–98) of the National Organizing Committee for the

7th International Conference on Permafrost in Yellowknife in 1998. As a member of the editorial committee of the International Permafrost Association, he was one of the compilers of “Frozen Ground,” the IPA’s semi-annual news bulletin and attended IPA council meetings as a representative of Canada. Alan was ahead of his time, serving as secretary of the International Permafrost Association’s Working Group on Permafrost Data and Information (1993–98), a group that set the stage for the method standardization, permafrost data rescue, and data sharing, which have led in the last few years to numerous circumpolar syntheses relating to permafrost. Alan’s contributions were recognized by the Royal Geographical Society and the Royal Canadian Geographical Society, both of which made him a fellow.

Alan died in Wakefield, Quebec, on 4 July 2022. He is survived by his wife Gillian, son James, sister Linda, and two grandchildren.

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