This two-day workshop was convened with the twin aims of reviewing the state of water and climate research in Canada using isotope tracers and investigating the establishment of a revitalized "Canadian Network for Isotopes in Precipitation", as a contribution to the international GNIP program (Global Network for Isotopes in Precipitation), which is the well-known offspring of long-standing IAEA/WMO efforts to document the distribution of water isotopes in the global water cycle. About 60 participants from university, government, and the private sector gathered for two days of presentations and discussions at the University of Waterloo, Ontario, Canada.

The workshop was sponsored by Environment Canada, through the Atmospheric Environment Service (Downview, Ontario) and the National Hydrology Research Institute (Saskatoon, Saskatchewan), with additional support from the Canadian Geophysical Union, the Waterloo Centre for Groundwater Research, and several other Waterloo-based university research bodies.

Background on international GNIP activities, the PAGES perspective, and comments on experience gained from national isotope networks in Switzerland and Germany were provided in Plenary Lectures by Klaus Froehlich (IAEA) and Ulrich Schotterer (PAGES). Special guests Emi Ito (University of Minnesota) and Carol Kendall (US Geological Survey) offered narrative on the current situation in USA regarding potential for developing a national precipitation network and the existing USGS isotopic data base from surface waters. Subsequent presentations were selected to sample the broad spectrum of past and present activities in Canada, falling into three general areas: assessment of existing isotopic data from past and ongoing precipitation sampling in Canada and efforts to define the nature of isotope-climate linkages; atmospheric studies, including discussion of carbon and oxygen stable-isotope signals in atmospheric carbon dioxide and links with the water cycle; and the use of isotopic tracers in hydrologic, paleohydrologic, and ecologic studies of surface and ground waters, groundwater, and the water isotope records preserved in other archives.

The presentations demonstrated clearly that substantial Canadian expertise exists in this field, complemented by the capacity and willingness to train young researchers. The discussions also led to consensus that an expanded network of 20-30 meteorological stations collecting monthly-composite precipitation samples for isotopic analysis was desirable and feasible, building on the network of sites in Canada currently contributing data to GNIP. The existing "CNIP" includes Ottawa (1953-present) and eight northern stations (1989-present), plus data in the GNIP archive from previous monthly-composite sampling campaigns at a number of other sites in the 1970s and 1980s. Various targeted research projects, including ongoing event-based precipitation sampling in Winnipeg (1992-present), have also generated abundant data that are not yet formally archived. A revitalized CNIP would constitute a valuable Canadian contribution to international water and climate studies, as well as providing a framework for nested campaigns requiring more intensive temporal or spatial sampling, such as the Mackenzie Basin Study of the Global Energy and Water Cycle Experiment (GEWEX-MACS).

The workshop culminated in a provisional agreement to work towards the establishment of a rejuvenated and expanded CNIP, based on a model in which responsibilities for sample collection and analysis would lie, respectively, with the Atmospheric Environment Service of Environment Canada and a consortium of university and government isotope laboratories. A special sub-committee of the Committee on Isotope Tracer Techniques within the Hydrology Section of the Canadian Geophysical Union will assume responsibility for overall scientific direction and administration, and the continuity of the program.

Aspects of the challenges and opportunities associated with CNIP will also be addressed at the upcoming annual meeting of the Canadian Geophysical Union (Banff, 4-9 May 1997) and the ISOBALANCE International Workshop on Application of Stable Isotopes in Water Balance Studies (Saskatoon, 14-18 July 1997).

Further information about the CNIP Workshop and ongoing activities can be obtained through:

**Thomas W.D. Edwards**
Associate Professor Dept of Earth Sciences University of Waterloo 200, University Avenue West Waterloo, ON N2L 3G1, CANADA Phone: +1 519 888 4557 ext 3236 Fax: +1 519 746 0183 e-mail: twdedwar@uwaterloo.ca