

CGU Hydrology Section Committee Reports 2008

Erosion and Sedimentation Committee

Chair: Peter Ashmore, Department of Geography, University of Western Ontario, London, ON, N6A 5C2
Email: pashmore@uwo.ca

Members: Dr. Dirk DeBoer, University of Saskatchewan, M. Conly, Environment Canada (CWS), Sasakatoon, Dr. M. Church, University of British Columbia, Dr. A. Roy, Université de Montréal

Dirk DeBoer is Secretary of the IAHS-International Commission on Continental Erosion Secretary and ICCE Canadian Delegate

Objectives: the scientific advancement and practical application of knowledge of erosion, transport and deposition of sediment in fresh water systems - topic coverage similar to that of the IAHS Commissions on Continental Erosion some aspects of Water Quality.

- i) communication of current research via discussion, meetings, conferences and publications;
- ii) identification and promotion of high priority research topics in the Canadian context;
- iii) promotion and encouragement of the transfer of knowledge and technology in the field of interest.

Meetings & Activities

- Continued representation at CGU-HS sessions.

- Reciprocal membership arrangement and affiliation between CGU and Canadian Geomorphology Research Group has resulted in several sessions at other national conferences jointly between the two groups.
- Several sessions at 2008 CGU conference jointly with CGRG. Ashmore was a member of the program committee and helped coordinate sessions between the two organizations.
- Ashmore led the preparation of a summary of recent Canadian research in fluvial sedimentation for IAHS-CNC, with co-authors Pascale Biron (Concordia), Colin Rennie (Ottawa) and Brett Eaton (UBC). Now in press in CWRA Journal.

Glaciers and Environment Committee

Chair: Michael N. Demuth, P. Eng., P. Geo., Head, Glaciology Section, Geological Survey of Canada, Natural Resources Canada, 601 Booth Street, Ottawa, ON KIA 0E8,

Mike.Demuth@NRCan.GC.CA

Vice-Chair: Prof. Gwenn E. Flowers, Canada Research Chair, Glaciology, Simon Fraser University,
gflowers@SFU.CA

Past-Chair: Prof. D. Scott Munro, University of Toronto

Advisory Members: Prof. Sarah Boon, University of Lethbridge; Prof. Gwenn E. Flowers, Simon Fraser University; Dr. Roy Koerner, Geological Survey of Canada; Prof. Shawn Marshall, University of Calgary; Prof. Brian Menounos, Univ. of Northern British Columbia; Prof. D. Scott Munro, University of Toronto; Prof. John W. Pomeroy, University of Saskatchewan; Jeffrey Schmok, P. Geo., Golder

Associates Ltd.; Prof. Martin J. Sharp, University of Alberta.

Mandate and Objectives

- a. Assist the CGU and its executive in promoting glaciological research that is relevant to hydrological and environmental problems.
- b. Provide CGU members with information about glaciological research activity, and identify opportunities for collaboration among individuals and groups.
- c. Provide CGU members with information about the scope and extent of glaciological data, and promote efforts to improve accessibility to such data.
- d. Influence research development by establishing lines of communication with other working groups in snow and ice, such as the Cryospheric System (CRYSYS) to monitor global change in Canada and identify personnel training opportunities.
- e. Identify and promote opportunities for educating other members of the scientific community and the general public about glaciers and their role in the environment.

Meetings and Activities

- a. The Geological Survey of Canada's National Glaciology Program (NGP), co-supported by the Natural Resources Canada, Environment Canada and University partners continues to develop and operate an integrated monitoring and research program in the Canadian Arctic and western and northern Cordillera. Additional information pertaining to the *State and Evolution of Canada's Glaciers* can be found at:
http://pathways.geosemantica.net/WSHome.aspx?ws=NGP_SECG%26locale=en-CA

b. Mike Demuth, continues as Canadian National Correspondent to the World Glacier Monitoring Service and Canadian Co-ordinator, Global Terrestrial Network for Glaciers/WMO-GCOS.

c. Simon Ommanney returns to assume the position of the Canadian National Correspondent to the International Glaciological Society. Periodic submissions to the IGS are made by the Correspondent, notifying the international glaciology community of Canadian work on snow and ice via the IGS publication ICE.

d. David Burgess has been hired as a Cryosphere Remote Sensing Specialist at NRCan's Canada Centre for Remote Sensing and will, through NRCan's science programs, be mentoring under Roy Koerner to operate the Arctic Islands ice cap mass balance observing work. In addition, he will be working with Mike Demuth on glacier remote sensing. Dave's hiring represents an important step forward in the continuation and recognition of Roy's labours and insights spanning some 50 years.

e. Mike Demuth, Gwenn Flowers, Roy Koerner, Shawn Marshall and Martin Sharp have appeared in recent Canadian Broadcasting Corporation television and radio programs that deal with global warming and ice cover loss in Arctic and Western Canada.

f. Sarah Boon and Shawn Marshall are co-convenors of CGU 2008: Hydrology and the Cryosphere

g. Scott Munro is Canadian Representative to IACS and National Organizing Committee member for MOCA-09: the Joint IAMAS-IAPSO-IACS Assembly, Montreal 2009.

Progress on Issues and Objectives

The NGP work, in linkage with the Cryospheric System (CRYSYS) program of Environment Canada, has been central to the objectives of this committee, where training in partnership with universities occurred through continued development of hydrometeorological research at NGP glacier mass balance sites in Western Canada, as well as through work in the Canadian Arctic. Despite the conclusion of the CRYSYS program, prospects for NGP-university linkages look brighter than ever, now that two new cryosphere research initiatives are underway:

Improved Processes and Parameterization for Prediction in Cold Regions (IP3; John Pomeroy, P.I.) and *Western Canadian Cryospheric Network* (WC2N; Brian Menounos, P.I.). This signifies expanded opportunities for interaction among cryospheric scientists in Canada. We believe that this will raise the international profile of Canadian cryospheric research and do much to train new researchers to investigate the rapidly changing cryosphere.

Future Meetings and Activities

Progress toward a collaborative Canadian glacier monitoring and research network, a need identified in the GSC Workshop (Ottawa, 2000) and promoted through the Canadian Government's Action Plan 2000, CSA GRIP and previous CRYSYS meetings, is expected to take on new life with the advent of IP3 and WC2N. Continued participation of the Canadian glacier research community in the CGU Annual Meeting is vital in this regard, so the Committee will look forward to continued organization of CGU-HS sessions on glaciological research, as

well as to being influential at other meetings that provide opportunities to communicate the research efforts of our community. The forthcoming IAMAS/IAPSO/UCCS joint assembly, the theme of which is *Our Warming Planet*, will provide an excellent opportunity to display Canadian cryospheric research findings just as the efforts of IP3 and WC2N are bearing fruit.

Other Business

The glacier inventory and the degree of change within what is still a large reservoir of land ice is a continuing matter of concern, particularly as it relates to water resource changes in Western Canada and flow to oceans aspects of water and ice discharges from the Canadian Arctic Islands. With new remote sensing tools (e.g., CryoSat2) coming on-line soon and the increasingly systematic use of repeat airborne laser terrain mapping surveys, water fluxes from Canada's large land ice reservoirs are currently being defined more comprehensively.

As noted at the final CRYSYS meeting, there is an urgent need to deal with issues related to archiving and sharing of data resources, a matter that could involve the Committee at some future date but which, for now, can be explored within IP3, WC2N and the NGP. As it concerns mass balance data, a new data portal under development within the aforementioned *State and Evolution of Canada's Glaciers* web Workspace will assist the sharing and utility of this much sought after data. The Workspace will also facilitate Canada's annual and biennial contributions to World Glacier Monitoring Service.

The Committee would like to work with other CGU-HS committees on defining research needs the cut across the themes of the Hydrology Section. There is much work to be done, for example, in the area of glacier river ecology and the eco-system services provided by the presence of glaciers. To this end, many of NGP's glacier observing and assessment efforts are conducted now in partnership with Parks Canada and their requirements to monitor ecological integrity under the Heritage Convention. The newest NGP glacier observing and assessment effort focuses on the glaciers of the Ragged Range in the NWT – glaciers that are part of the proposed expansion of Nahanni National Park. These observations and related analyses are co-delivered with NGP staff and have become part of the Park's formal EI monitoring program as of 2008.

CGU-HS Northern Research Basins Committee

Chair and Canadian Chief Delegate:
Kathy L. Young, Geography
Department,
York University

One of the main activities of the CGU-HS Northern Basins Committee during the last year was participation at the 16th NRB Symposium and Workshop to be held in Petrozavodsk, Russia, 27-Aug. to 2-Sept. 2007. The general theme of the 16th meeting was **Time-space changes in the northern hydrological systems: features, consequences, prediction**. As outlined in the NRB Mandate and the Canadian NRB terms of Reference, the Canadian participation in the NRB is

limited to 10 delegates appointed by the Canadian Chief Delegate (and approved by the CGU-HS Executive) to represent Canadian interest in the hydrology of northern areas. The Canadian Chief Delegate to the 17th meeting was Kathy Young. Chris Spence, who took over the Deputy Chief Delegate position from Philip Marsh was unfortunately not able to attend.

Canadian delegates are invited based on past experience and in order to represent various aspects of Canadian northern hydrology. While nine delegates initially indicated that they would attend, due to last minute federal government budget constraints and visa issues, only five Canadian delegates attended. Participants included Hok Woo (permafrost modelling), Kathy Young (high arctic environments), Richard Janowicz (operational water resources and the Wolf Creek research watershed), Melissa Lafreniere (cold regions hydrology and biogeochemistry) and Anna Abnizova (subarctic, high arctic wetland hydrology). Other participants attending the meeting included delegates from the USA, Denmark, Finland, Japan and Russia. Plenary sessions included papers on Climate Change Impacts on Hydrological Processes; Snow & Ice, Regional Hydrology and Hydrologic Methods & Investigations. Limited task force reports (PUB, Thermal Regime of Lakes) were presented during the workshop. All delegates appreciated the kind hospitality of the Russians and enjoyed a rafting trip down the Shuga River, a boat trip on Lake Onego and a cultural side-trip to Kizhi Island. However, the attending NRB group was disappointed that no delegates from Sweden, Norway and Iceland attended and a letter was circulated by Doug

Kane (USA Chief Delegate) urging a greater participation in 2009. As in other years, Canadian participants were invited to submit their paper to the refereed journal *Nordic Hydrology* (to be renamed *Hydrologic Research*) for a special edition.

Canada will be hosting the 17th NRB meeting **August 12-18, 2009**. The symposium/workshop will be held on an expedition ship which will travel from Iqaluit to Pangnirtung and then onto Kuujuaq. The conference theme is **Managing Hydrological Uncertainty in High Latitude Environments**. Achievements from the IPY will also be communicated and there will be a special session on Hydrology and Ocean Interactions. Plans are underway to hold a Public Workshop/Open House in Pangnirtung where a discussion on critical water issues, both local and global will be held. An organizing team as been formed (Kathy Young, Chris Spence, William Quinton, Richard Janowicz Sean Carey, Melissa Lafreniere, Anna Abnizova and Laura Brown) and fund-raising has commenced. An application was recently submitted to the IPY Government of Canada Program-Training, Communications and Outreach. Support for the conference has recently come from INAC-NWT, CGU & CGU-HS, Yukon Government, Environment Canada, University of Wilfrid Laurier, Carleton University, Queen's University and York University. A preliminary announcement of the meeting circulated early October 2007, and a formal call for papers will occur in early September 2008.

Canada has taken back responsibility for the main NRB websites and NRB

listserv and is actively trying to rejuvenate the Northern Research Basins working group. Laura Brown has updated these web sites: www.canadiannrb.com and www.northernresearchbasins.com. Information about the 17th NRB can be found on these websites or contact Kathy Young for more details: klyoung@yorku.ca.

Committee on River Ice Processes and the Environment

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Bourdages, Brian Burrell, Shawn P.
Clark, Evan Freisenhan, Joe Groeneveld,
Chris Katopodis, Chandra Mahabir,
Mike Morris

International Members: Randi Pytte Asvall (Norway), Steven Daly (United States), Mikko Huokuna (Finland), Hung Tao Shen (IAHR)

Affiliate Members: R W Carson, Kersi Davar, Terry Prowse

About CRIPE:

CRIPE derived from a Working Group that was established in 1975 by the Associate Committee on Hydrology (ACH), itself funded by the National Research Council of Canada (NRCC). This working group evolved into a permanent Subcommittee of ACH in 1981. Severe budget cuts at NRCC forced the discontinuation of the associate committees in the early nineties. In 1995, the former River Ice Subcommittee of ACH joined the Canadian Geophysical Union, as a Committee of the Hydrology Section.

CRIPE Mandate and Objective:

Initially, the Committee's work focused on the hydraulic aspects of river ice phenomena, as a means of elucidating the effects of the ice cover on flow characteristics. This scope was gradually expanded to include additional issues of concern, such as ice formation, ice jams, winter operation of hydro-plants, environmental aspects of river ice, and climatic variability and change. The main objectives of the Committee are:

1. To identify specific high-priority topics for research and development and promote the undertaking of relevant research programs;

2. To facilitate information dissemination and exchange of ideas among practitioners, researchers, and resource managers; and

3. To encourage the incorporation of pertinent lectures or courses in undergraduate and graduate studies at Canadian Colleges and Universities.

Meetings and Activities:

One of the main Committee activities is the sponsorship of workshops and short courses and the publication of Proceedings. The first river ice workshop was held at Burlington, Ontario, in 1980, and the most recent workshops took place in Hanover, New Hampshire, in 2005 and Quebec City in 2007. Another ongoing activity is the initiation and leadership of Task Forces to work on specific problems and publish their findings. From time to time, the status of knowledge on particular topics is reviewed and research needs are identified. Liaison with river ice work abroad is maintained through formal and informal links.

14th Workshop, Quebec City. June 2007

The 14th Workshop of the Committee on River Ice Processes and the Environment was held in Quebec City in June 2007. A total of 40 papers and 12 posters were presented at the workshop. Topics covered included:

- Ice jam risk, impact, and mitigation
- River ice measurements and monitoring
- River ice modeling
- Special session on the St. Lawrence River

- Frazil ice
- Ice jam surges
- River ice ecology and fish habitat

The interest in topics of river ice ecology and fish habitat is building and attracts a new group of interested researchers. This area of research compliments the topics of interest to CRIPE which have largely been focused on the physical aspects or river ice processes.

The workshop was hosted by INRS and the University of Laval. Brian Morse, Raymont Bourdages, and Yves Gauthier were co-chairs and David Godin and Hugo Drouin were workshop helpers. Their work is gratefully acknowledged.

Workshop Proceedings are freely available online at www.cripe.ca. Selected papers from the workshop have been expanded into full journal papers for a special issue of the Journal of Cold Regions Science and Technology.

2005 Gerard Medal

In 1992, the Committee established the Gerard Medal, to honour and remember the many contributions to river ice science by the late Professor Robert (Larry) Gerard who passed away in 1991. The Gerard Medal is awarded biennially to the author(s) of the best paper presented at the preceding River Ice Workshop.

The 2005 Gerard Medal was awarded to: M. Jasek, J. Marko, D. Fissel, M. Clarke, J. Buermans, and K. Paslawski for their paper entitled "*Instrument for Detecting Freeze-up, Mid-Winter and Break-up Ice Processes in Rivers*". The medals were awarded at the 2007 workshop in Quebec.

2006 Annual Meeting

CRIPE holds an annual administrative meeting and technical workshop in alternating years (between workshops). The 2006 meeting was held in Fredericton, NB, in conjunction with technical meetings for the Unified River Ice Breakup Model (URIBM)

2007 Annual Meeting

The 2007 annual meeting was held on June 23rd, 2007 in Quebec City, following the 14th CRIPE workshop. In addition to dealing with ongoing administrative and committee business, discussions were held on committee technical initiatives and membership renewal.

Following nominations by the committee at this meeting, the following new members have recently joined CRIPE, Dan Healy (AMEC Earth and Environmental) to the executive committee as secretary and the following committee members: Shawn Clark (University of Manitoba); Evan Friesenhan (Alberta Environment); Joe Groenveld (Hutch Consultants); and Mike Morris (Manitoba Hydro).

2008 Annual Meeting

The 2008 annual meeting will be held on July 6th in Vancouver, British Columbia. The meeting precedes the 19th IAHR International Symposium on Ice. Topics to be covered at the meeting include:

- Planning for the upcoming major training workshop (2010)
- Status of current research publications and projects

19th IAHR International Symposium on Ice, Vancouver, British Columbia, July 2008

CRIPE is hosting the 19th IAHR Ice Symposium, which will be held from July 6th to 11th, 2008, at the Coast Plaza Hotel in downtown Vancouver. Topics to be covered at the Symposium include:

- Environmental concerns in ice-infested water
- Ecology of ice covered waters
- River, lake, and reservoir ice engineering
- Formation and evolution of ice
- Navigation
- Ice/structure interaction
- Mechanics and physics of ice
- Ice management
- Mathematical and physical modeling
- Oil spills in ice-covered sea areas
- Climate change and ice conditions
- Break-up processes and river ice jams
- Freeze-up processes
- River and reservoir ice problems at hydroelectric facilities
- Frazil and anchor ice
- Instrumentation for measuring and monitoring river, sea, and lake ice
- Remote sensing of river, lake, and sea ice
- Ice related chemistry in lakes and tailings ponds

Martin Jasek deserves special mention for his efforts in organizing this event. For more information on the workshop visit www.cripe.ca/iahr-2008/.

15th Workshop, Saint Johns, Newfoundland. 2008

The next Workshop of the Committee on River Ice Processes and the Environment will be held in Saint Johns Newfoundland in June 2008. Visit the CRIPE website for updates and information (www.cripe.ca).

Report of the Forest Hydrology Sub-Committee of CGU-HS

Activities relevant to forest hydrology in Canada in 2007-08

Major activities related to forest hydrology revolved around the participation of Canadian forest hydrologists in a number of hydrology-related workshops:

1. Workshop on “Mountain Pine Beetle and Watershed Hydrology Workshop, Kelowna, July 2007. This workshop (158 participants) had 22 presentations on research from BC, Alberta and Colorado related to the impacts of the Mountain Pine Beetle (MPB) infestation on hydrology. Additional information can be found at: Redding, T.E. (Ed.). 2007. Mountain Pine Beetle and Watershed Hydrology: Preliminary Results of Research from BC, Alberta and Colorado (Workshop Handbook and Presentation Summaries). 60 p.
www.forrex.org/program/water/mpb_hydrology.asp

2. Workshop on “Upper Penticton Creek Watershed Experiment”, Kelowna, July 2007. This workshop had eight presentations on hydrology research being conducted as part of the Upper Penticton Creek Watershed

Experiment. There were 105 participants at the workshop, and 16 participants on the field tour. Additional information can be found in:

Redding, T.E. and Winkler, R.D. (Eds.). 2007. The Upper Penticton Creek Watershed Experiment: Results of a Paired Watershed Study Into the Effects of Forest Management on Water Resources (Workshop Handbook and Presentation Summaries). 22 p.

Redding, T.E. 2007. The Upper Penticton Creek Watershed Experiment: Results of a Paired Watershed Study Into the Effects of Forest Management on Water Resources - Post-Workshop Evaluation Survey Summary and Results. FORREX Internal Report. 9 p.

3. Workshop on “Linking Trees and Water: A Fresh Perspective on Forest and Flood Hydrology”, Kelowna, July 2007. This was a technical hydrology seminar presented by Younes Alila (UBC) on a new analysis method for examining watershed disturbance effects on peak flows. There were 44 participants.

4. Workshop on “Watershed Response to Fire”, Kelowna, March 2008. Dan Moore and Brett Eaton (both UBC) ran a workshop on the Fishtrap Creek project in Kamloops. The goal of the project is to provide a better understanding of the mechanisms of hydrogeomorphic response to vegetation disturbance, specifically the McLure fire of 2003. The workshop was attended by about 40 people from government, industry and academia. More information can be found at:

http://www.geog.ubc.ca/~beaton/Fishtrap/Overview_files/FishtrapBooklet.pdf

5. Workshop on “Hydrological Implications of Mountain Pine Beetle: Learning from Experience”, Edmonton, October 2007. This workshop brought together hydrologists and other scientists from Canada and the United States with interests in the impacts of the MPB infestation on water resources. Speakers addressed the hydrological, assessment, management and regulatory aspects of the infestation. There were about 200 participants.

6. Hydrology Technical Field Tour, Prince George, September 2007. The focus of the tour was riparian evaluation protocols and long-term harvest impacts. There were 34 participants. Another area of activity was the annual eastern and western graduate student conferences sponsored by the CGU-HS. The western conference was held on January 28, 2008 at the University of Saskatchewan and had 19 student presentations, some of which dealt with aspects of forest hydrology. The eastern conference was held on December 7-8, 2007 at the University of Waterloo, with 19 oral presentations and 11 poster presentations. A portion of these presentations dealt with aspects of forest hydrology.

These activities attest to the increasing importance being paid by governments, industry and academics to the role of hydrologic processes in Canada’s varied forest landscapes, and to the need to understand how these processes may respond to natural and anthropogenic disturbance. Another important activity related to forest hydrology in Canada was a progress report on forest hydrology research in Canada for the period 2003-2007 that was been prepared by members of the Forest

Hydrology subcommittee of CGU-HS. This report formed part of the overall report on progress in hydrology in Canada prepared by the Canadian National Committee for the International Association for Hydrological Sciences (CNC-IAHS), presented at the 2007 Quadrennial meeting of the International Union of Geodesy and Geophysics held in Perugia, Italy.

Committee on Isotope Tracers

Jean Birks (Chair), Alberta Research Council, University of Waterloo
Tom Edwards, University of Waterloo
John Gibson, Alberta Research Council, University of Victoria (President IAHS International Commission on Tracers)
Claude Hillaire-Marcel, GEOTOP-UQAM
Roy Krouse, University of Calgary
Fred Michel, Carleton University

Objectives and Activities

The long-term objectives of the committee are to:

- promote and advance the understanding and application of isotopic tracer techniques in hydrology and related sciences
- initiate and participate in research and education programs, maintain contact with relevant organizations, report on national and international research activities, information sources, isotope monitoring networks, and databases
- establish working groups and/or subcommittees to assess specific, high-priority topics for research, monitoring and/or development, and
- disseminate current research and important findings to the

scientific community via discussion, meetings and conferences, and publications

Progress on Issues and Objectives:

Tracer committee members continue to be active in the promotion and advancement of the understanding and application of isotopic tracer techniques in hydrology and related sciences. Of particular interest are the application of isotope tracers for the evaluation of hydrological and hydroclimatic models and the organization of regional, national and global networks that serve to build scientific capacity for tracer-based research. Some highlights from 2007 are summarised below.

Activities supported, 2007

Isotope Tracer Committee supported meetings and workshops

- *HW1001* Isotope Tracing of Water Balance, Hydrodynamics, and Hydrological Processes, Perugia Italy. The session included 28 presentations (19 talks, 9 posters) and lively discussions on the role of isotope tracers in a range of investigations including precipitation-runoff generation processes, tropical storms, lake dynamics and water balance, hydrograph separation, unsaturated zone, groundwater recharge, karst systems, geothermal systems, and regional hydrology. A range of tracer applications were presented including use of artificial tracers, CFCs, SF₆, stable isotopes of water, carbon, sulphur and nitrogen, and numerous radioisotopes including carbon-14, radon-222, chlorine-36, and tritium. One significant trend in the discipline is toward holistic integration of isotopes and other tracers within multi-faceted, multi-disciplinary water resources

research programs. Participants included representatives from countries in all inhabited continents. The success of the session and the extent to which tracers have been incorporated within presentations in other sessions suggests that ICT serves a growing audience in the hydrological sciences.

- *HS2005 Water Quality and Sediment Behaviour of the Future: Predictions for the 21st Century*, sponsored by ICWQ, ICCE, ICGW, PUB and ICT
- Biosphere-Atmosphere Stable Isotope Network 2006 Pre-AGU Meeting, 10 Dec 2007, San Francisco, USA (Gibson J.J., invited presentation)

Other and ongoing committee activities:

- “Report on isotope hydrology in Canada 2002-2007” was prepared by Gibson and Birks (with contributions from B Mayer, JF Helie, WM Buhay, L ID Clark, TWD Edwards, K Higuchi, L Huang, and D Chan) to give an overview of recent progress in isotope tracer hydrology and related research.
- maintenance of the Tracer Committee web-site
http://www.science.uwaterloo.ca/~jjgibs/on/gibson_files/isotope.html
- support of IAEA/WMO Global Network of Isotopes in Precipitation and Large Rivers Program
- liaison and support for expanding national isotope monitoring/science networks (Canada: Canadian Network for Isotopes in Precipitation, Manitoba Network for Isotopes in Precipitation, United States: USNetwork for Isotopes in Precipitation)
- participation in the IAEA CRP *Geostatistical analysis of spatial isotope variability to map the source of water for hydrology and climate studies* (Birks, SJ)

Planned activities, July 2008 – June 2008

Special session, Isotope tracers in hydrology, Hyderabad India, 6-13 September 2009.

CNIP Subcommittee:

Operation of CNIP continued during the past year, with sampling conducted by the Meteorological Service of Canada and analyses supplied by the Environmental Isotope Laboratory, University of Waterloo. The network consists of 19 stations distributed across Canada (spanning almost 40° of latitude and 70° of longitude) collecting weighted monthly precipitation samples for d¹⁸O and d²H analyses. This marks the first time that both the southern and northern regions of the country have been simultaneously sampled. Sampling of the southern stations was initiated in 1997 to supplement an existing informal arctic network (now formally incorporated in CNIP) resulting in a ten-year dataset for the entire country, including a complete El Niño/Southern Oscillation (ENSO) cycle. Detailed analysis of the complete monthly data series from the first ten years of CNIP operation (1997-2007) is underway.