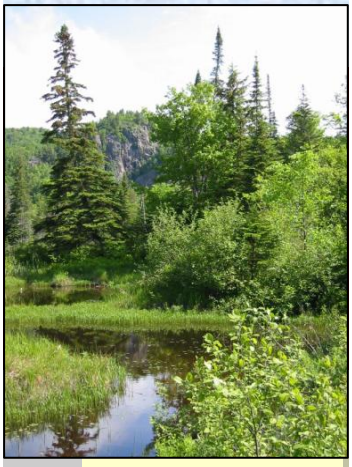
Summer 2006



"protecting Canada's valuable water resources"

HYDROECOLOGICAL LANDSCAPES AND PROCESSES

HELP News and Notes

Message from Project Director:

Canada's forest landscapes are of great regional, national and international significance for a wide range of ecological, economic, social and cultural reasons. As part of the sustainable management of Canada's forest resources, we need an improved understanding of the dominant hydroecological processes and properties of the varied forest landscapes across the country. This will become of increasing concern given mounting pressures on water quality and quantity in various part of Canada during the 21st century.

"..define criteria and indicators for detecting hydroecological responses to forest management activities."

Unfortunately, much of our understanding of the hydroecological functioning of differing forest landscapes and their sensitivity to forest disturbance comes from a relatively small number of studies, and our ability to extend these results to other parts of the country and to different spatial scales is unclear.

The "Hydro-Ecological Landscapes and Processes" (HELP) project, funded by the Sustainable Forest Management Network in spring 2006, represents a national-level attempt to address this issue. The HELP project is coordinated by an interdisciplinary team of federal (Canadian Forest Service) and university (Alberta, British Columbia, Guelph, Laval, Trent, Western Ontario) scientists, and will include interactions with non-government and government agencies, industry and First Nations to ensure the transfer of science to policy and operations.

This project is examining terrestrial-aquatic linkages across Canada's forest landscapes with the aim of producing a framework for quantifying hydrologic, geomorphic and ecologic processes of forest landscapes at the national level. This framework will be used to define criteria and indicators for detecting hydroecological responses to forest management activities.

The project will also test the ability of various modelling strategies to scale study results at the local level to entire drainage basins in order to assess the cumulative effects of management activities in different forest landscapes across Canada. This upscaling will be based on information obtained from both the results of scientific studies and through traditional First Nation's knowledge of the nature and function of particular forest landscapes.

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Inside this issue:

HELP will be hosting an expert workshop November 9-11th at the Catchment Research Facility, The University of Western Ontario located in London, Ontario.

See page 3 for details.

Project Director's introduction continued...

The HELP research team will work together to compare watershed characterization schemes and develop a suitable scheme for the Canadian context. This watershed characterization scheme will then be used to develop analytical frameworks for quantifying hydrologic, geomorphic and ecologic processes in different forest landscapes in Canada.

Ultimately, the goal of the project is a national framework that will allow forest managers to make appropriate and relevant decisions across scales that can range from site specific stands to whole forests, to translate that information between different stands as well as different forest landscapes, and to predict potential impacts of specific forest operations under current and/or future climate conditions.

This newsletter is the first of a series that is intended to provide periodic updates on the HELP project's progress. It is also our hope that the material provided in this and subsequent newsletters will provoke a national-level discussion of the importance of the hydroecological role of forests in the context of sustainable forest management. Therefore, on behalf of the project team, I invite your comments on the HELP project's objectives and its results, and would welcome the opportunity to explore the potential for collaboration in our activities.

Dr. Jim Buttle, Professor, Trent University, [jbuttle@trentu.ca]

Meet the new project members

We have been busy hiring personnel for the project during the summer. Except for two Ph.D. students, all proposed positions have been filled.

Chelene Krezek [Data manager-GLCF]: M.Sc. (Biology - U. of Western Ontario). Her thesis explored the impacts of timber harvesting on peak flows in the Carnation Creek watershed using a distributed simulation model. She has been working at GLCF for 3 years as a database manager for the SFMN funded SID project. She has been hired for the development and management of the HELP national database and will also provide support to the PDF projects.

Mark Johnson [PDF-UBC]: M.Sc. (Biological and Environmental Engineering—Cornell University); Ph.D. (Soil, Crop and Atmospheric Sciences - Cornell University). His doctoral dissertation focused on linkages between hydrology and biogeochemistry on Amazonian pastures and forested headwater catchments. Dr. Johnson will contribute to the efforts of the HELP project in developing and assessing watershed criteria and indicators of hydroecological responses to forest management.

Gabor Sass [PDF-Western]: M.Sc. (Geography—U. of Toronto); Ph.D. (Geography—U. of Western Ontario). His doctoral thesis focused on hydrologic controls on the trophic status of shallow lakes in northern Alberta. His role in HELP will be test the ability of different modelling strategies to scale study results at the local level to entire drainage basins as a precursor to assessing cumulative effects of management activities in different forest landscapes across Canada.

Sima Javid [PHD-Trent]: M.Sc. (Conservation Biology—National University of Malaysia). Her thesis dealt with natural resource utilization by Chewong Tribe in Krau Wildlife Reserve. Her role in HELP will be to gain insights into extremes in hydrological conditions from oral histories of indigenous peoples.

Martin Seto [PHD-Laval]: M.Sc. (Forest Sciences—Laval University). His research relates to the effects of forest harvesting on physical and chemical characteristics of lakes and streams located in the eastern boreal forest of Canada. His role in HELP will be to provide water quality data sets and other spatial datasets that cover the province of Quebec.

Project tidbits

Data sharing agreements: The HELP project is largely reliant on the use of existing databases. To facilitate the sharing of datasets among HELP researchers, we are working to have data sharing agreements in place by the end of 2006. The data manager will responsible for keeping these agreements up-to-date.

Website: The success of large collaborative research is predicated on the dissemination of scientific as well as logistical information. In order to facilitate this we are currently developing a web-space for both public and private dissemination of project information.

Aboriginal field camp at Red Lake, Ontario (September 14-16)

Example of timber harvesting on land south of Pikangikum territory.

River acting as the boundary between forests managed by Pikangikum and the provincial government.

Photos: Dr. Irena Creed

Field-camp participants.

HELP researchers Dr. Irena Creed (Western), Dr. Gabor Sass (Western), and Sima Javid (Trent) participated in the SFMN organized Aboriginal Forum from September 14-16th, 2006. The goal of the forum was to educate the participants of the Whitefeather Initiative of the Pikangikum First Nation. The aim of the initiative is to secure commercial forest management tenure, and forestry and protected areas opportunities within the traditional territories of the Pikangikum First Nation.

A Pikangikum elder describing the Whitefeather Initiative.

Roadside chats with elders.

Preparing for the first HELP workshop: November 9-11

The foundation of the HELP project is the development of a watershed classification system that can be used to identify the dominant hydrological processes (e.g., land-atmosphere or land-aquatic) and the potential susceptibility of these hydrological processes to forest management activities.

To facilitate the development of the watershed classification system we are organizing an "expert" workshop, to which we are inviting hydrology experts from Canada and the US, in addition to all project researchers and partners. Project participants will "brainstorm" to present nationally relevant classification systems and identify keystone hydroclimatic / hydrogeomorphic / hydroecological (HC/HG/HE) processes within the classification schemes that are potentially susceptible to forest management activities.

Location: Catchment Research Facility, The University of Western Ontario, London, Ontario

Dates: November 9th to 11th, 2006

For more information on participation in the workshop, please contact Workshop Coordinator Dr. Irena Creed [icreed@uwo.ca; 519-661-4265]

Contacting HELP researchers and partners

The HELP project is a large collaborative project with 9 Principal Investigators, 1 Data Manager, 2 Post-Docs, 3 Ph.D. students and SFM Network partners comprising aboriginal groups, governments and industries. If you are interested in exploring collaborative work within HELP, please contact project director, Dr. Jim Buttle.

HELP RESEARCHERS

Name	Institution, Department	Telephone, email
Principal Investigators		
Fred Beall	Canadian Forest Service, Great Lakes Forestry Centre	(705)-541-5553, fbeall@NRCan.gc.ca
Jim Buttle	Trent University, Geography	(705)-748-1011, ext. 1475, jbuttle@trentu.ca
Irena Creed	The University of Western Ontario, Biology	(519)-661-4265, icreed@uwo.ca
Kevin Devito	University of Alberta, Biological Sciences	(780)-492-9387, Kevin.devito@ualberta.ca
Carl Mendoza	University of Alberta, Earth and Atmospheric Sciences	(780)-492-2664, Carl.Mendoza@ualberta.ca
Dan Moore	University of British Columbia, Geography	(604)-822-3538, rdmoore@geog.ubc.ca
André Plamondon	Laval University, Forest Science	(418)-656-2131, ext. 2620, Andre.Plamondon@sbf.ulaval.ca
Paul Sibley	University of Guelph, Environmental Biology	(519)-824-4120, ext.52707, psibley@uoguelph.ca
Uldis Silins	University of Alberta, Renewable Resources	(780)-492-9083, Uldis.Silins@ualberta.ca
Collaborators		
Peter Hearns	Government of Newfoundland and Labrador, Natural Resources	(709)-256-1416, peterhearns@gov.nl.ca
Highly Qualified Personnel		
Chelene Krezek [Data manager]	Canadian Forestry Service, Great Lakes Forestry Center	ckrezek@NRCan.gc.ca
Mark Johnson [PDF]	University of British Columbia, Geography	msj8@cornell.edu
Gabor Sass [PDF]	The University of Western Ontario, Biology	sassgabor@gmail.com
Sima Javid [PHD]	Trent University, Geography	simajavid@yahoo.com
Martin Seto [PHD]	Laval University, Forestry	martin_seto@hotmail.com

HELP PARTNERS

SFM Network Partners	Contact person	Telephone
Aboriginal groups		
Moose Cree First Nation	John Turner,	(705)-658-4619, john.turner@moosecree.com
Governments		
Natural Resources Canada, Canadian Forest Service	John Hall, Science advisor	(613)-947-0646, John.Hall@nrcan-rncan.gc.ca
Government of Alberta, Sustainable Resource Development, Forest Management Branch	Doug Sklar, Executive director	(780)-427-8474, doug.sklar@gov.ab.ca
Government of British Columbia, Ministry of Forests and Range, Research Branch	Dan Hogan, Research geomorphologist	(250)-387-6721, Dan.Hogan@gov.bc.ca
Government of Newfoundland and Labrador, Department of Natural Resources, Forest branch	David Fong, Regional ecosystems director	(709)-256-1450, dfong@gov.nl.ca
Government of Ontario, Ministry of Natural Resources	Rob Mackereth, Research scientist	(807)-343-4009, rob.mackereth@mnr.gov.on.ca
Industry		
Abitibi-Consolidated Inc.	Paul Poschmann, Divisional forester	(807)-825-7794, paul_poschmann@abicon.com
Louisiana-Pacific Canada Ltd.	Paul LeBlanc, District forester	(204)-734-4102, Paul.Leblanc@lpcorp.com
Tembec Inc.	Kari Stuart-Smith, Forest scientist	(250)-426-9380, kari.stuart-smith@tembec.com
Ducks Unlimited Canada	Eric Butterworth, Senior biologist	(780)-489-8110 e_butterworth@ducks.ca
SFMN KETE liaison for HELP project		
Margaret Donnelly	Knowledge exchange manager	(902)-837-1090 margdonn@ns.sympatico.ca

Hydroecological landscapes of Canada's forests

Project director:
Dr. Jim Buttle,Professor
Department of Geography, Trent University,
1600 West Bank Drive, Peterborough,
Ontario, Canada K9J 7B8
Phone: 705-748-1011, ext.1475
Fax: 705-748-1205

HELP - us make this newsletter better

We are publishing this newsletter to provide detailed information about progress in the HELP project. Submissions to this newsletter, suggestions about content and corrections to previous editions are always welcome. If you are interested in contributing materials, please call or send email to: Dr. Irena Creed [icreed@uwo.ca; (519)-661-4265] or Dr. Gabor Sass [sassgabor@gmail.com; (519)-661-2111 ext.86843].