



# Your Health and a Changing Climate

# Newsletter

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## Newsletter Launched

Welcome to the first edition of the joint Climate Change and Health Office (CCHO — visit: [www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)) and the Canadian Climate Impacts and Adaptation Research Network (C-CIARN — visit: [www.c-ciarn.ca/health](http://www.c-ciarn.ca/health))

Health Sector Newsletter . This newsletter is being produced to share results of ongoing and completed research on the impacts of and adaptations to a changing climate on the health and well-being of Canadians.



## About Us

The CCHO was established in 1998 to address the expected impacts of climate change on health and well-being by working with partners, both inside and outside of the Government, in support of research to better understand the health effects of climate change, to raise awareness of these effects and to begin integrating climate change considerations into public health policies in Canada.

The Canadian Climate Impacts and Adaptation Research Network (C-CIARN) facilitates the generation of new climate change knowledge by bringing researchers together with decision-makers from industry, governments, and non-government organizations to improve our knowledge of Canada's vulnerabilities to climate change.

Since 2001, CCHO has been hosting the health sector of C-CIARN. In order to reach out to its various research communities, CCHO established several networks of researchers, stakeholders, and policy makers to promote and support research, to exchange information and to provide advice on the health issues expected to be impacted by climate change. These issues include air pollution, water-borne and food-borne contamination, vector-borne and zoonotic diseases, extreme weather events, population vulnerabilities and the socio-economic impacts on community health and well-being.

## Climate Change Action Fund (CCAF)

Call for Letters of Interest (LOI) for impacts and adaptation research on climate change and human health and well-being was posted December 11, 2003. Deadline for submissions is February 18, 2004. Total funding available in this call — \$750,000.

>>> For more information, visit: [http://adaptation.nrcan.gc.ca/proposal\\_e.asp](http://adaptation.nrcan.gc.ca/proposal_e.asp)

### C-CIARN Health Sector Research Network Websites

Health Effects of Extreme Weather Events Research Network  
[www.iclr.org/research/research\\_network.htm](http://www.iclr.org/research/research_network.htm)

Air Pollution-related Health Effects Research Network  
[www.climateairhealth.ca](http://www.climateairhealth.ca)

Health Effects of Water and Food-borne Contamination Research Network  
[www.eccho.ca/networks.asp](http://www.eccho.ca/networks.asp)

Vector-borne and Zoonotic Disease Research Network  
[www.eccho.ca/networks.asp](http://www.eccho.ca/networks.asp)

Population Vulnerabilities in Rural and Urban Communities Research Network  
[www.chuq.qc.ca/oms/cc](http://www.chuq.qc.ca/oms/cc)

### In this issue:

About Us	1
Impacts and Adaptation Research	2
International Research Projects	8
Policy Initiatives	8
Outreach Activities	10
Funding And Partnerships	11
Publications And Conferences	12
Upcoming	12

## Climate Change and Public Health in Nunavik and Labrador



Led by Dr. Pierre Gosselin, Laval University, and funded by the CCAF, this project aimed to develop a better understanding of climate change processes and potential health impacts on the residents of these two regions, through a review of pertinent health sciences, environmental, medical and traditional knowledge literature, expert consultation, and by conducting focus groups with experienced hunters, Elders and women in Nunavik and Labrador. In both regions, noticeable changes

were reported to have taken place over the last 20 to 30 years. Participants identified impacts they feel these changes have had on their ability and safety to travel at certain times of the year and on their ability to find and hunt certain country food species in the region or gain access to clean, natural sources of drinking water while out on the land practising traditional pursuits. Adaptive strategies already utilized to mediate the impacts of these changes (such as changed hunting patterns, heavier reliance on community freezers at certain times of the year, need to increase land based knowledge among youth) were identified when possible, however the focus of discussions was on observed changes and related impacts.

>>> For more information, contact:  
[pierre-l.gosselin@crchul.ulaval.ca](mailto:pierre-l.gosselin@crchul.ulaval.ca)

## Climate Change and Human Behaviour

Led by Dr. M. Ouimet, Université de Montréal, and funded by the CCAF, researchers examined, using statistical analysis, the relationship between daily meteorological conditions (temperature, humidity, rain, snow and wind) and the number of crimes, automobile accidents and suicides in the Montreal area. They found that automobile accidents tended to increase on days with precipitation, while violent crimes were more common on warm and humid days. Suicide rates did not appear to be influenced by weather. The researchers also compared crime statistics for January 1997 and January 1998, to examine how the 1998 Ice Storm affected crime rates in three Quebec communities. They found that crime rates were generally lower during the Ice Storm.

>>> For more information, contact:  
[ouimetm@crim.umontreal.ca](mailto:ouimetm@crim.umontreal.ca)

## Feasibility of Identifying Heat-Related Illness and Deaths As a Basis for Effective Climate Change Risk Management and Adaptation

Led by Dr. Yang Mao at Health Canada, this study, funded by the CCAF, examined whether health care records for hospital visits were suitable for assessing heat-related health effects. Researchers looked at relationships between heat-related illnesses and heat stress periods (air temperatures greater than or equal to 30°C) between 1992 and 1999. In comparing Ottawa, Ontario and London, Ontario they found that Ottawa had almost twice as many heat stress periods (22 vs. 12),

and Ottawa hospitals treated more than double the amount of patients for heat-related health problems (117 vs. 53). The researchers concluded that medical records may be useful for monitoring health effects of heat, and identifying vulnerable population groups in different cities and regions.

>>> For more information, contact:  
[yang\\_mao@hc-sc.gc.ca](mailto:yang_mao@hc-sc.gc.ca)  
See details on the followup study on page 3.

## Assessment 2006

The Climate Change and Health Office at Health Canada has launched the *Canadian Climate Change and Health Vulnerability Assessment 2006*, which will be a key component of the *2006 National Climate Change Impact Assessment* led by Natural Resources Canada. Regular national assessments are part of the Government of Canada's international obligations to report on impacts and adaptation efforts.

Launched in June 2003, this national project on health impacts is guided by a Steering Committee of experts with representation from governments, academia, and non-governmental organizations including those in the public health sector. It will allow leading experts across Canada to contribute to a better understanding of how vulnerable Canadians are to climate change. As one part of this assessment, an Expert Advisory Group of academics, non-governmental organizations and government representatives met on November 27–28, 2003 to discuss how best to gauge the capacity of Canadians and their institutions, particularly the public health sector, to adapt to risks associated with climate change and climate variability. CCHO will continue to work with interested researchers and decision makers to complete the Health Assessment 2006 and to make it a useful tool for informing our response to the expected health impacts of climate change in communities across Canada.

>>> For more information, contact:  
[peter\\_berry@hc-sc.gc.ca](mailto:peter_berry@hc-sc.gc.ca)

## Impacts of Global Climate Change on the Incidence of Water-borne Diseases in Canada



Led by Dr. David Waltner Toews at the University of Guelph and funded by the Health Policy Research Program at Health Canada, this project addresses two issues important to the health of Canadians: the risk of water-borne illnesses and the health impacts of climate change. The Canadian burden from water-borne illnesses is unknown, though it presumably accounts for a significant proportion of intestinal problems. Recently, large outbreaks with severe consequences caused by *E. coli* O157:H7 and *Cryptosporidium* have alarmed Canadians and brought demands for political action. There is also an urgent need to understand the

health impacts of climate change, to develop strategies to prevent or be prepared for its effects.

The research project is investigating the incidence of water-borne illnesses in Canada, describing the complex systemic inter-relationships between disease incidence, weather parameters, and water quality and quantity, and projecting the potential impact of global climate change on those relationships.

The study unites several disciplines (climatologists, epidemiologists, microbiologists, hydrologists, and water quality specialists), involves direct participation from universities, Health Canada and Environment Canada, and will communicate with other federal and provincial agencies, First Nations, and the water industry in an interdisciplinary policy-oriented approach. The project is expected to be completed in 2005.

>>> For more information, visit: [www.eccho.ca](http://www.eccho.ca)

## A Multi-Centre Approach to Investigating the Health Impacts of Extreme Weather Events Related to Climate Change and Climate Variability

Dr. Yang Mao, Health Canada, is the principal investigator in this study, funded by the CCAF. In order to assess the effects of climate change on the health of a population, it is necessary to understand the relationship between health and climate under current and past conditions. It is important to identify and quantify the health effects associated with climate and how these effects may vary by region or by population. Using and evaluating the administrative health databases in different centres across Canada and linking them to climate conditions over an approximate

10 year period, will provide new knowledge regarding the vulnerability of certain populations and/or regions.

This information can then be used for more accurate assessments of the health implications of climate variability and climate change and population health in Canada, and to provide policy and decision-makers with a scientific basis for preventive and adaptation measures needed.

>>> For more information, contact:  
[yang\\_mao@hc-sc.gc.ca](mailto:yang_mao@hc-sc.gc.ca)

## Climate Change, Extreme Weather Events and Health Effects in Alberta

Led by Dr. Colin Soskolne, University of Alberta, and funded by the Health Policy Research Program at Health Canada, the overall objective of this research is to investigate historical responses, at the local level, to extreme weather events and disasters in Alberta as documented in community newspapers. By examining how people responded and adapted to such events in the past, future policy could be better informed. Better-informed policy should minimize impacts that future extreme weather events could have on the health and well-being of those populations affected by extreme weather. Four specific objectives will be met through the course of this two-year study:

- I. Provide the equivalent of a hazard assessment by identifying past extreme weather events and disasters in Alberta (from meteorological data and a disaster database), and relate them to print media reports as far back as 100 years ago;

2. Identify the possible consequences of extreme weather events resulting from climate change on morbidity, mental health, injuries, death, and infrastructure/property loss in Alberta;
3. Correlate the data from two existing databases (i.e., Emergency Preparedness Canada (EPC) and Environment Canada (EC) data with print media reports; and
4. Suggest how the combining of weather and health data could be integrated to advance Health Canada's Sustainable Development Strategy.

To date, the project has identified extreme weather events over the past 100 years through meteorological data and the Canadian Disaster Database, and developed a content analysis framework and applied it to several thousand computerized newspaper reports extracted through extensive library archive research. Analysis is underway and expected to be completed by 2004.

>>> For more information visit:

<http://www.phs.ualberta.ca/climatechange/index.html>

## Heat Related Effects on Chronically Ill Patients in Montreal

Led by Dr. Tom Kosatsky, and funded by the CCAF, this 2 1/2 year project involves a collaboration between the Montreal Public Health Department, the Nursing School of the Université de Montréal, and two McGill University Health Centre clinics. Its' aim is to assess the knowledge, attitudes, and behaviours of Montrealers with chronic lung and heart conditions faced with hot, polluted or both, summer days. The pilot phase was implemented during the summer of 2003, recruiting over 50 patients at the McGill University clinics. Through

individual interviews, focus groups, and consultations with experts, a bilingual questionnaire was developed that assesses whether and why patients have and use air conditioning, drink extra water, reduce activities, and/or institute other protective measures during heat waves. This data is currently under analysis and is being used to improve the questionnaire for implementation in the full study during the summer of 2004.

>>> For more information, contact:

[tkosatsk@santepub-mtl.qc.ca](mailto:tkosatsk@santepub-mtl.qc.ca)

## Air Quality, Health and Emissions Growth in the New Economy

Dr. Ross McKittrick, University of Guelph, has received funding from the Initiative on the New Economy, Social Sciences and Humanities Research Council, to study how economic changes and technological change affect Toronto air quality, and what this can teach us about the environmental future of growing cities.

With increasing urbanization and growth of large cities, it is necessary to settle controversial questions about whether city air is a serious health hazard. Much of the work on this topic has been done in the epidemiological and medical fields. There is room for a contribution from an econometric perspective, where aspects of long-run causality can be modeled using the methods of time series analysis, integrating economic indicators directly. Dr. McKittrick is working with an economics graduate student as well as colleagues at Statistics Canada and the Canadian Institute of Health Information to develop a national data base showing monthly air pollution levels, hospital admissions for lung-related complaints (by age group), and other socio-economic covariates including local smoking rates, economic activity, and income levels. The data cover 13 cities from 1973 to 1998 and will allow the researchers to directly test hypotheses connecting lung-related morbidity and mortality following increased air pollution episodes. The project is also looking at global carbon dioxide emission forecasts.

>>> For more information, contact:

[rmckitri@uoguelph.ca](mailto:rmckitri@uoguelph.ca)



## Impacts of Climate Change on the Spread of Lyme Disease in Canada:

Dr. Dominique Charron, Health Canada, co-ordinator of the Vector-borne and Zoonotic Diseases Research Network and Chris O'Callaghan of Queen's University are the principal investigators on this research funded by the CCAF. Lyme disease is a tick-borne zoonotic bacterial infection caused by *Borrelia burgdorferi s.l.* The disease is rare in Canada, but can occur where populations of infected ticks are endemic (parts of southern Ontario and coastal and central British Columbia) with sporadic cases reported across the country. Most infections in people result from exposure to ticks during recreation or occupational activities where infected ticks are endemic. The initial symptoms of Lyme disease are mild but may progress to a more serious systemic illness, which in turn may, if untreated, become chronic. As climate and land use change, the disease may pose a greater threat to Canadian public health in future. The goal of the project is to determine the role of climate in Lyme disease distribution and ecology in Canada, the potential impact of climate change, and to assess the Canadian response capacity to impacts of climate change on Lyme disease.

Within the four and a half months since the project's inception, the following have been achieved:

**Objective 1 – Search of Canadian data/literature, overview of current (known) tick distributions and examine associations with climate.** Data on the occurrence of *Ixodes scapularis* ticks in Canada east of the Rockies have been collated from a number of sources and mapped using Arc View.

**Objective 2 – Development of dynamic transmission models of *Borrelia burgdorferi* linked to climate parameters.** It was originally proposed that the project would develop a Lyme (*B. burgdorferi*) transmission model based on an existing population model of the tick vector *I. scapularis*. This model has proven impractical for the project purposes. The researcher has found that existing (but as yet unpublished) data on the effects of temperature on tick development times in the laboratory allow reasonable prediction of tick development in the field. These data have been incorporated in a deterministic model of *I. scapularis* populations, developed de novo, to investigate the effects of climate temperature on the survival of *I. scapularis* populations. It is hoped this form of model outcome will be appropriate to investigate effects of climate change on the potential suitable geographic range of *I. scapularis*. A more complex model that does account for seasonality (that will also be used to model the occurrence of endemic cycles of Lyme disease) has been developed and is being tested. It is anticipated that a paper detailing the effects of temperature on *I. scapularis* development will be ready for publication in early 2004, and a paper outlining the model and initial investigations of effects on *I. scapularis* mortality rates will follow shortly after.

>>> For more information, visit: [www.echo.ca](http://www.echo.ca)



## Impact of Climate Change on Food Security in Three Northern Aboriginal Communities — Plans for Adaptation

Led by Dr. Laurie Chan, McGill University and Dr. Christopher Furgal, Laval University, and funded by the CCAF, this project plans to investigate the potential health impacts of climate change on three northern aboriginal communities; one coastal (marine mammal based diet) and two taiga (terrestrial mammal and fish based diet) and to develop strategies for adaptation to minimize potential impacts. A comprehensive resources management scheme is being developed with the communities that will integrate local and traditional ecological knowledge, wildlife biology, information on toxicology of environmental contaminants, food composition and nutrient requirement, food availability and the effects of environmental changes, cultural and socio-economic factors. The participatory nature of the research will ensure northerners' involvement and/or training in all stages of research projects, including the initiation, planning, implementation, and communication of results. The goal of the study is to help communities and health professionals characterize the specific nutrient and contaminant related

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## Air Pollution Related Mortality

Led by Dr. Monica Campbell, this research, funded by the Health Policy Research Program at Health Canada, will investigate the synergistic impacts that weather and air pollution have on human mortality for selected locations in south-central Canada. The specific objectives are: (1) to determine impacts on mortality rates due to heat waves, cold spells, snow and ice storms from current and changed weather patterns by comparing mortalities; (2) to investigate the synergistic impacts of outdoor air quality and natural pollutants on excess mortalities in both summer and winter; (3) to estimate climate change related trends in severe weather event risks and recommend health and emergency adaptation policies to protect populations; and (4) to use study results to assess modifications to a Heat-Health Alert/Emergency system that is currently being piloted in Toronto and could be considered for other Canadian cities.

The outcomes from this research are expected to improve the understanding of environmental health problems in south-central Canada by investigating the factors triggering excess mortality and to assist in developing better policies on health protection.

>>> For more information, contact:  
[mcampbe2@toronto.ca](mailto:mcampbe2@toronto.ca)

## Impact of Climate Change on Toxic Phytoplankton Blooms and Shellfish Toxicity

Led by Dr. Maurice Levasseur, Laval University, and funded by CCAF, this project is determining the role of climate on the development and intensity of toxic algal blooms, through the analysis of 10 years of hydrological, biological and meteorological data. Researchers have found that the development of blooms was favoured by high run-off from local tributary rivers, combined with prolonged periods of low winds, while more intense algal outbreaks were associated with extreme climate events, such as heavy rainfall. If conditions such as these become more common in the future, we can expect to see an increase in the onset and proliferation of toxic algal blooms in eastern Canada.

>>> For more information, contact:  
[maurice.levasseur@bio.ulaval.ca](mailto:maurice.levasseur@bio.ulaval.ca)

## Impact of Climate Change on Food Security

... continued from page 5

impacts resulting from changes in country food availability related to climatic changes. Appropriate adaptation strategies will be cooperatively developed in the three communities. Education and communication initiatives are also planned to assist individuals in making their own informed decisions on food choice. A comprehensive resource management paradigm that will assist in planning for aspects of food security will be developed. This management paradigm will be of value for environmental and health planning exercises throughout the Canadian North in the face of climate related changes.

>>> For more information, contact: [chan@macdonald.mcgill.ca](mailto:chan@macdonald.mcgill.ca)

## Defining a Research Agenda for Indoor Moulds

On November 24–25, members of the Climate Change, Air Pollution and Health Research Network participated in a workshop entitled “The Science and Technology of Mould in the Indoor Environment”, organized by the Healthy Indoor Partnership (HIP), to define a new research agenda for indoor moulds. Network members assisted with the organization of this meeting and attended with the objective of encouraging participants to develop research agenda using a climate change lens.

>>> For more information, contact:  
[barb.mackinnon@nb.lung.ca](mailto:barb.mackinnon@nb.lung.ca)

## ArcticNet

ArcticNet is a new Canadian Network of Centres of Excellence (NCE). Over the next four years, the Government of Canada will invest \$25.7 million in ArcticNet to look at the scientific challenges resulting from Arctic warming using a cross-sectoral approach involving researchers from 41 Canadian and foreign universities.

Dr. Pierre Gosselin, coordinator of C-CIARN Health's Population Vulnerabilities Research Network (visit: [www.chuq.qc.ca/oms/cc](http://www.chuq.qc.ca/oms/cc)) and several of his Network members will be conducting research for ArcticNet.

This NCE will build synergy among existing Arctic Centres of excellence in

the natural, medical and social sciences. The central objective of the Network is to translate our growing understanding of the changing Arctic into impact assessments, national policies and adaptation strategies. Over the next four years, ArcticNet will conduct Integrated Regional Impact Studies (IRIS) of the East-West environmental and societal gradient of the coastal marine Canadian High Arctic; the North-South gradient of terrestrial ecosystems in the Eastern Arctic; and the land-ocean interaction zone in Hudson Bay. Each of these IRIS will contribute the knowledge needed to formulate policies and adaptation strategies for the Canadian coastal Arctic (Theme 4), that address the

following concerns of users: the rate of change of the Arctic environment; reducing human vulnerability to hazardous events; adapting the public health system to change; protecting key animal species; maritime transport in an ice-free Canadian Arctic; and the economic impacts of environmental change in the Arctic. Dr. Gordon McBean, scientific advisor for C-CIARN Health's Extreme Weather Events Research Network, is the project leader for Theme 4 which will formulate policies and adaptation strategies for the Canadian coastal Arctic.

>>> For more information, visit:

[www.cases.quebec-ocean.ulaval.ca/arcticnet/accueil.asp](http://www.cases.quebec-ocean.ulaval.ca/arcticnet/accueil.asp)

## CIHR — New Emerging Team (NET) in Rural and Northern Health Research

The Canadian Institutes of Health Research have announced a cross-cutting strategic initiative in Rural Health Research & Northern Health Research. Future climate change is likely to be rapid in comparison to past changes, and its impact is predicted to be greatest in the North. Scientific knowledge is needed to understand and predict the effects of climate change on the physical and biological environment, ecosystems, and the human population of the North. Despite the benefits of living in small communities, research comparing

urban to rural and northern communities indicates that a gap in health status exists. A need exists to investigate the complex interplay of factors that lead to increased morbidity and mortality and to translate the new knowledge to improve the health of all rural and northern Canadians.

Dr. Pierre Gosselin and members of C-CIARN Health's Population Vulnerabilities Research Network have submitted a letter of intent for this funding. Their project, if accepted, would focus on the development and

measurement of a set of reliable, easily applied distress indices of the health of coastal communities and research to better understand impacts of environmental degradation in coastal areas and their relationships to human health. This proposed research program would be implemented in remote coastal areas where environmental health information and scientific infrastructure is currently lacking.

>>> For more information, contact:

[pierre-l.gosselin@crchul.ulaval.ca](mailto:pierre-l.gosselin@crchul.ulaval.ca)

**Submit information about your research on climate change and health issues for a future newsletter.**

[Climatinfo@hc-sc.gc.ca](mailto:Climatinfo@hc-sc.gc.ca)  
indicating in subject line  
For Newsletter

## Food Diversity, Biodiversity and Health Impacts of Short- and Long-Term Changes in Precipitation.

Abdel Maarouf of Environment Canada, member of the Vector-borne and Zoonotic Diseases Research Network, is working with other researchers from York University and Mexico in an ongoing research project with initial funding from the International Development Research Centre (IDRC). The team's research is focused on patterns of drought and flood conditions over the entire North American continent. The first phase is based on precipitation records collected from 7,000 sites in Mexico from the mid-1800s to the present. Their results show that drought/wet zones do not correspond to traditional climate zones. The intent is to study the relationship of drought/wet periods to changes in agricultural production and food security, changes in human health—insect transmitted diseases such as malaria and dengue fever — and changes in biodiversity.

>>> For more information, contact:  
[abdel.maarouf@ec.gc.ca](mailto:abdel.maarouf@ec.gc.ca)

## The Lung Associations' International Centre for Air Quality and Health

This International Centre is a partnership of Lung Associations in eastern Canada and New England and aims to promote timely and significant actions that lead to the reduction in air pollutants and the improvement of human health within this airshed. Activities include: collecting, organizing, and interpreting data and by coordinating research that addresses data gaps; improving informational linkages between all sectors dealing with air quality and human health; developing policy recommendations; encouraging community based studies and initiatives; promoting actions to reduce pollution and reduce the impacts of it

>>> For more information, visit:  
[www.can-us-airhealth.org](http://www.can-us-airhealth.org)



## Senate Committee Supports Increasing Funding to C-CIARN

The Senate Standing Committee on Agriculture and Forestry has released its final report entitled Climate Change: We are at risk. C-CIARN Forestry and Agriculture sectors made a presentation to the Senate Committee and C-CIARN has been singled out in this report.

Recommendation 4: states that the role and resources available to Canadian Climate Impacts and Adaptation Research Network (C-CIARN) be expanded and increased, such that the organization provides a more visible face both to the Canadian public, particularly the young people, and to all facets of Canadian society, and to facilitate: the development of cooperative climate change impacts and adaptation research projects; on the ground operational trials and; the communication of research results through workshop, seminars, discussion fora, newsletters, websites, and other education and awareness programs.

>>> For more information, visit:  
[www.c-ciarn.ca](http://www.c-ciarn.ca)



## Senate Committee on Social Affairs, Science and Technology released its Report Entitled *Reforming Health Protection and Promotion in Canada: Time to Act.*

On September, 17, 2003, the Senate Committee on Social Affairs, Science and Technology heard presentations from Health Canada which stated that disease outbreaks could be worse in the future due to climate change which is expected to alter the range of disease-carrying organisms and result in increases in the emergence and persistence of infectious diseases. Report recommendations included establishment of a new agency by March 31, 2004, the Health Protection and Promotion Agency, with a mandate to enhance disease surveillance and control in Canada and to direct federal efforts to be prepared for any health emergency

and work closely with the provincial and territorial authorities to ensure that there is adequate capacity in all regions of the country.

C-CIARN Health prepared a paper outlining the impacts of climate change on infectious diseases, health protection, and promotion in Canada.

>>> For more information, contact:  
[marcia\\_armstrong@hc-sc.gc.ca](mailto:marcia_armstrong@hc-sc.gc.ca)

>>> For a copy of the report, visit:  
[www.parl.gc.ca](http://www.parl.gc.ca)

## Adaptation Strategies to Reduce Health Risks from Summer Heat in Toronto

In June 2001, public health adaptation measures were implemented in Metropolitan Toronto to help protect residents from extreme heat and cold events. Extensive collaborations between many different governmental (e.g., emergency services, housing services, libraries) and non-governmental organizations (e.g., pharmacy chains, seniors' networks) were established to help protect more vulnerable population groups, such as seniors and homeless people from thermal extremes. Some examples of the adaptation

strategies implemented include: extreme cold weather and extreme heat announcements via news media; active intervention by public health and volunteer agencies (e.g., street patrols to locate and care for homeless people); increased availability and accessibility of heated and air conditioned public buildings, drop-in centres and shelters and; new guidelines for managing long-term care facilities.

>>> For more information, contact:  
[eliget@tafund.org](mailto:eliget@tafund.org)

## Adapting Health Infrastructure in the Toronto-Niagara Region

To overcome barriers to effective adaptation, researchers recommend the following: integrate efforts to develop coordinated responses to climate change and health; expand existing monitoring, reporting and surveillance networks to include climate-related health impacts; increase and improve professional and public education of adaptive actions; involve organizations, such as the Canadian Association of Physicians for the Environment in education campaigns; learn and build from past experiences to develop organizational structure for proceeding with an adaptation action plan.

>>> For more information, contact:  
[qchiotti@pollutionprobe.org](mailto:qchiotti@pollutionprobe.org)

## OUTREACH ACTIVITIES



### Health Canada Lecture Series

On October 22, 2003, Dr. Dieter Riedel, Health Canada and Mr. Denis Bourque, Environment Canada, made a joint presentation, sponsored by CCHO and C-CIARN Health, entitled *Your Health and a Changing Climate* to a wide audience of Health Canada representatives and others with an interest in the health effects of weather and climate. Dr. Riedel is the author of the soon-to-be-released health chapter of *Climate Change Impacts and Adaptation: A Canadian Perspective* being published by Natural Resources Canada. (see page 12)

Dr. Riedel pointed out that even with measures to reduce greenhouse gas emissions, climate change is inevitable. Its effects will have economic, social, and environmental impacts on Canada which, in turn, will influence the health and well-being of Canadians. Using examples of recent studies of climate and weather related events affecting human health, earth images obtained by satellites, and technological developments that will allow the health sector to incorporate weather data into health care planning, the presentation provided a better understanding of the range of health issues that could be influenced by climate change and variability and the need to prepare for the changes that will result.

>>> For more information, contact:  
[marcia\\_armstrong@hc-sc.gc.ca](mailto:marcia_armstrong@hc-sc.gc.ca)

### Lectures on Climate Change, Extreme Weather Events, and Health

Dr. Gordon McBean, scientific advisor to C-CIARN Health's Extreme Weather Events Research Network, hosted by the Institute for Catastrophic Loss Reduction, spoke to interested groups at the University of Alberta and the University of British Columbia (organized by C-CIARN BC) about the alarming increase in the impacts on people, property and the environment from extreme weather events associated with natural disasters. The social and health effects arising from these events have caused major stress on Canadians, causing both physical injury and psychological trauma. To date, our understanding of the full health impacts of these disasters is limited. To confront this reality, more research is required to develop the foundation of scientific evidence concerning the health and social impacts of extreme weather-related events.

>>> For more information, visit:  
[http://www.iclr.org/research/research\\_network.htm](http://www.iclr.org/research/research_network.htm)

### Open Meeting — Human Dimensions of Global Environmental Change — Montreal October 16–18, 2003

Following a decade of sustained interdisciplinary research on the human dimensions of global change, this meeting was designed to examine: transitions and change; governance, markets and ethics; and poverty and security. The theme of this meeting was "Taking Stock and Moving Forward" and climate change was an important component of many of the sessions.

The New Brunswick Lung Association and their International Centre for Air Quality and Health, host of C-CIARN Health's Research Network on Climate Change, Air Pollution and Health (visit [www.climateairhealth.ca](http://www.climateairhealth.ca)) presented a poster entitled "Using meteorological and air quality monitoring data to understand community health impacts of air pollution"

C-CIARN Health and CCHO had a joint booth at this conference and shared information on the health impacts of climate change with an audience of international researchers.

>>> For more information, visit:  
<http://sedac.ciesin.columbia.edu/openmeeting/>

## Network for Environmental Risk Assessment and Management (NERAM) International Colloquium — Rome, Italy, November 5–7, 2003.

The objective of the Colloquium *Strategies for Clean Air and Health* was to examine health effective policy options for air quality management in North America and Europe based on currently available scientific information on: strategies for risk management and risk reduction; exposure and health effects, and; air quality modeling over time and space.

Dr. Peter Berry, CCHO, presented a poster entitled "The Air We Breathe: Climate Change and Health & Well-being in Canada" prepared by Dr. Berry and Dr. Dieter Riedel. The poster provided an overview of climate change and air quality in Canada, and briefly described the effects of mitigation efforts on air quality and the work of Health Canada in the national climate change and health assessment (see article on page 3)

>>> For more information, contact: [peter\\_berry@hc-sc.gc.ca](mailto:peter_berry@hc-sc.gc.ca) or visit: [www.irr-neram.ca](http://www.irr-neram.ca) or <http://airnet.iras.uu.nl>.

## Earth System Science Partnership (ESSP) Joint Project on Global Environmental Change and Health

At the "Global Environmental Change and Health" meeting in February 2003, participants agreed that a new joint project on health constitutes a priority since there is no long-term research initiative on this topic and no established international scientific community. Member groups of ESSP include the International Geosphere-Biosphere Program (IGBP — visit: [www.igbp.kva.se](http://www.igbp.kva.se)), International Human Dimensions Program (IHDP — visit: <http://www.ihdp.org/>) World Climate Research Program (WCRP — visit: [www.wmo.ch/web/wcrp/wcrp-home.html](http://www.wmo.ch/web/wcrp/wcrp-home.html)) and DIVERSITAS (an international global environmental change program — visit: <http://www.diversitas-international.org/>) Participants produced a draft scientific framework, entitled "Global Environmental Change and Human Health" which was finalized in November 2003 and then sent around for consultation.

The ultimate goal of the project is to protect and enhance human well-being and the environment in the face of the threats of global environmental change (GEC). Specific objectives include: assess past, current and future health impacts of GEC; elucidate the particular health-related upstream drivers of GEC; harmonize mitigation and adaptation; and develop and use new methodologies to explore the tension between particular pathways of economic development, environmental change and human health.

Funding for some activities (eg. Workshops) will be available but there will be NO FUNDING FOR

RESEARCH. There may be seed grants for developing countries' scientists and international summer courses for young scientists. This activity will feed directly into the IPCC Fourth Assessment Report (2007)

>>> For more information, visit: [http://www.ihdp.unibonn.de/html/projects/joint\\_projects.html](http://www.ihdp.unibonn.de/html/projects/joint_projects.html)

## Government Invests \$10 Million in Northern Ecosystem Initiative

The Minister of the Environment recently announced a five-year contribution of \$10 million to improve environmental decision-making in Canada's North. The funding renews the Northern Ecosystem Initiative (NEI), a partnership based program that supports research to improve and enhance the health and sustainability of communities and ecosystems across Canada's North.

>>> For more information, visit: <http://www.pnr-rpn.ec.gc.ca>

## Climate Change Action Fund

Call for Letters of Interest (LOI) for impacts and adaptation research on climate change and human health and well-being was posted December 11, 2003. Deadline for submissions is February 18, 2004. Total funding available in this call — \$750,000.

>>> For more information, visit: [http://adaptation.nrcan.gc.ca/proposal\\_e.asp](http://adaptation.nrcan.gc.ca/proposal_e.asp)

## PUBLICATIONS AND CONFERENCES

## Recent Publications

**UPDATE** — Newsletter of the International Human Dimensions Programme on Global Environmental Change. Focus: Health. March 2003.

>>> Available from: [www.ihdp.org](http://www.ihdp.org)

**Climate Change, Adaptive Capacity, and Development.** Smith, Klein, Huq (Editors) \$86.

>>> Available from: [www.amazon.ca](http://www.amazon.ca)

**Climate Change Health Impact and Adaptation Assessment Guidelines.**

WHO and Health Canada. 2003.

>>> Available from: [postmaster@euro.who.int](mailto:postmaster@euro.who.int) or [www.euro.who.int/globalchange](http://www.euro.who.int/globalchange)

**Climate Change Health Impact and Adaptation Assessment Guidelines — Summary Document.** WHO and Health Canada. 2003.

>>> Available from: [climainfo@hc-sc.gc.ca](mailto:climainfo@hc-sc.gc.ca)

**Health Policy Research Bulletin**

A short article on the “Expert Panel Workshop on Climate Change and Health & Well-being in Canada” appears in the New and Noteworthy Section of Health Canada’s Health Policy Research Bulletin Issue 7. (Visit the Bulletin’s website at: <http://www.hc-sc.gc.ca/iacb-dgiac/arad-draa>) Workshop discussion included key aspects of the health and social impacts of climate change on Canadians and the role of co-benefits in the development of Canadian policy on climate change within the context of the Kyoto Protocol.

>>> Available from: <http://www.hc-sc.gc.ca>

## Upcoming Conferences

Federation of Canadian Municipalities Sustainable Communities Conference  
February 4–7, 2004. Ottawa  
[www.fcm.ca](http://www.fcm.ca)

Communities and the Impact of Climate Change (CUSO)  
Winnipeg, MN  
March 19–22, 2004  
[www.cuso.org](http://www.cuso.org)

Canadian Association of Geographers  
May 25–29, 2004  
Moncton, NB  
[www.cag-acg.ca](http://www.cag-acg.ca)

Congress of the Humanities and Social Sciences  
May 29–June 6, 2004  
Winnipeg, Manitoba  
<http://www.fedcan.ca/english/congress/congress.html>

Canadian Meteorological and Oceanographic Society  
Human Dimensions of Weather and Climate  
May 31–June 3, 2004  
Edmonton, Alberta  
[www.cmos.ca](http://www.cmos.ca)

Canadian Public Health Association Annual Conference  
June 13–16, 2004  
St. John’s, Newfoundland  
[www.cpha.ca](http://www.cpha.ca)

Canadian Water Resources Association (including socio-economic issues and health)  
June 16–18, 2004  
Montreal, Quebec  
[http://www.ouranos.ca/acrh/CWRA\\_montreal\\_2004.pdf](http://www.ouranos.ca/acrh/CWRA_montreal_2004.pdf)

World Clean Air and Environmental Protection Congress  
August 22–27, 2004  
London, England  
<http://www.kenes.com/cleanair/wel.htm>

Canadian Rural Health Research Society  
October 21–23, 2004  
Sudbury, Ontario  
<http://crhrs-scrsr.usask.ca>

## Soon-to-be-Released Publication

The Health Chapter of *Climate Change Impacts and Adaptation: A Canadian Perspective* written by Dr. Dieter Riedel of CCHO, reviews recent Canadian research on climate change impacts and adaptation in Canada’s health care sector. It also highlights the results of research funded by the Government of Canada’s Climate Change Action Fund. This chapter examines the potential impacts of climate change on human health and well-being in Canada as a result of future changes in temperature, precipitation and extreme climate events. The chapter also examines how adaptation has the potential to significantly reduce health-related vulnerabilities to climate change.

## Upcoming In the Next Issue

New Research Network on the Socio-Economic Impacts of Climate Change on Community Health and Well-Being

Climate Change and Health Information Toolkit Prepared for the use of Medical Officers of Health

Our mission is to help the people of Canada maintain and improve their health.

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