Preparing for

Climate 2100

Tools and Strategies for NB Communities

Sharing data, best practices,
and practical adaptation experiences
to sustain our communities.

November 14-16, 2012

Fredericton Convention Centre

Solutions d'adaptation aux changements climatiques pour l'Atlantique
Atlantic Climate Adaptation Solutions Association

The purpose of the Atlantic Climate Adaptation Solutions (ACAS) initiatives has been to provide information and decision-making tools regarding the anticipated effects of climate change on local communities. The ACAS collaboration between adaptation practitioners (planners and engineers) and multiple levels of government has helped to create resources and processes to facilitate routine consideration of the adaptation measures that will guide land use and protect valuable infrastructure now and in the future.

The Regional Adaptation Collaboratives (RAC) Climate Change Program was a three-year (2009-2012), cost-shared federal program aimed at stimulating climate adaptation planning and decision-making.

The Atlantic RAC focused on three main activity themes during the last three years:

1. Integrating adaptation into community planning (coastal land use risk and vulnerability; inland land use risk and vulnerability; infrastructure placement and design);
2. Managing groundwater resources; and
3. Building the capacity of adaptation practitioners in Atlantic Canada.

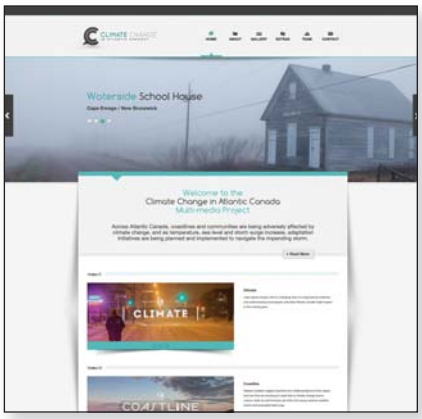
Various projects, research tools, approaches, resources and experiences are being highlighted during this conference in an effort to share what has been learned from the various projects in New Brunswick.

Video and Photo Exhibit Premiere

Dr. Ian J. Mauro
Canada Research Chair in
Human Dimensions of Environmental Change
Mount Allison University

Communities and Coastlines: Adapting to Climate Change in Atlantic Canada

Across Atlantic Canada, coastlines and communities are being adversely affected by climate change, and as temperature, sea level and tidal surge increase, adaptation initiatives are being planned and implemented to navigate the impending storm. Dr. Ian Mauro and his multi-media research team are using video to document this remarkable story of Atlantic adaptation and, over the past year, have conducted over 100 semi-structured interviews with stakeholders across the region, including: researchers, local and traditional knowledge holders, regional planners and government officials. Using cutting edge multi-media research techniques, the objective of this project is to holistically assess and present the challenges and opportunities facing Atlantic Canadians, as their environment, cities and municipalities, and mechanisms for societal governance experience often immense and immediate climatic changes. The results of the project suggest four main thematic case studies – focused on climate, coastlines, communities and adaptation – and will be released on an associated multi-media website that is launched at the November ACASA conference. Given the high-impact nature of digital media, this project seeks to increase awareness and educational opportunities for Canadians, about the real world experiences of coastal communities, and how they are on the front lines of climate change and adaptively responding to it.



This conference is presented by: Atlantic Climate Adaptation Solutions Association, Natural Resources Canada, Climate Change Secretariat of the New Brunswick Department of Environment and Local Government, Department of Public Safety.

Wednesday, November 14

			Location
5 pm	Registration		
7:30 pm	Opening Presentation Doors open 7 pm *Open to Public*	**Communities and Coastlines:** Adapting to Climate Change in Atlantic Canada Dr. Ian Mauro Mount Allison University (video documentaries)	Pointe Sainte Anne
	Photo Exhibit	Climate Change in Atlantic Canada This photo exhibit showcases how Atlantic Canadians are being impacted by and adapting to climate change.	Pointe Sainte Anne Atrium

Thursday, November 15

		Breakfast available	
7:30 am	Registration Poster session opens	**Breakfast Tables** – an opportunity to brainstorm, discuss, or strategize around the challenges your community faces and how you can begin to address them.	Pointe Sainte Anne
8:30 am	Welcome	**Honorable Bruce Fitch** Department of Environment and Local Government	Pointe Sainte Anne
8:45 am	Keynote Address	**Climate Change & Adaptation** David Phillips, Senior Meteorologist Environment Canada	Pointe Sainte Anne
9:15 am	Atlantic RAC	**Overview of the Atlantic RAC Program – 2009 to 2012** Glenn Davis ACASA	Pointe Sainte Anne
9:30 am	National Approach	**The Adaptation Platform and NRCan's approach to advancing adaptation** Dr. Niall O'Dea Natural Resources Canada	Pointe Sainte Anne
10 am	Nutritional Break	provided	
10:30 am	Panel Presentations	**Forecasts & modelling** What to expect from a changing climate to 2100 Dr. Neil Comer University of PEI	Pointe Sainte Anne
10:55 am		**Sea-level rise** Rising Sea levels – Coastal Threats (in French) Réal Daigle R.J. Daigle Enviro	Pointe Sainte Anne
11:20 am		**Economics** Economic impacts of climate change – how much do the impacts cost? Dr. Van Lantz University of NB	Pointe Sainte Anne
11:45 am	Questions		
12 pm	Lunch	provided	
1 pm	Case Studies	**Climate Change Adaptation in NB**	
	Greater Moncton	Storm water, sanitary sewers, road infrastructure – evaluating risk and developing options in Greater Moncton. Jack MacDonald City of Moncton Serge Dupuis City of Dieppe	Pointe Sainte Anne
1:20 pm	**Richibucto**	Saltwater in drinking water wells – what is the issue? Learnings from the Richibucto case study. Dr. Kerry McQuarrie University of NB	Pointe Sainte Anne

Thursday, November 15 Continued			**Location**
1:40 pm	**Grand Falls**	Steep slopes, increased erosion, risks to property and infrastructure in Grand Falls. Richard Keeley Grand Falls	Pointe Sainte Anne
2 pm	**Le Goulet, Shippagan, Bas Caraquet**	Engaging coastal communities in the Acadian Peninsula in decision-making for the future. (in French) Dr. Mélanie Aubé Institut de recherche sur les zones côtières	Pointe Sainte Anne
2:20 pm	**Tantramar**	Communicating Results of the Tantramar Dykelands Study – a planner's perspective. Tracey Wade Tantramar Planning District Commission	Pointe Sainte Anne
2:40 pm	Nutritional Break	provided	
3:10 pm	Indian Island	Approaches to adaptation in native reserves – the case of Indian Island. Kevin Barlow Indian Island Band & Companies	Pointe Sainte Anne
3:35 pm	Transportation	From culverts to roads and bridges – the need to plan for Infrastructure at risk. (in French) Patrick Mazerolle NB Department of Transportation & Infrastructure	Pointe Sainte Anne
4 pm	Emergency Response Planning	The roles and responsibilities of municipalities. Lisa Munn & Chris Hand NB Emergency Measures Organization	Pointe Sainte Anne
4:25 pm	Insurance Bureau	Municipal Risk Assessment Tool Robert Tremblay Insurance Bureau of Canada	Pointe Sainte Anne
4:50-6 pm	Free Time		
6 pm	Screening	**Communities and Coastlines: Adapting to Climate Change in Atlantic Canada** Dr. Ian Mauro Mount Allison University	Pointe Sainte Anne Atrium
7 pm	Banquet and Entertainment	**Lucien – Helter Smelter** Lucien (Marshall Button), the opinionated North Shore mill-worker and New Brunswick's Blue-Collar Philosopher first appeared in Fredericton, NB as part of a satirical Bicentennial revue, Maritime Mixed grill. The character was created by New Brunswick theatre artist Marshall Button. Marshall works in film, television and with the business community, helping to make everyday events come to life in an energetic and always entertaining fashion. For our conference, Marshall will tackle climate change head on with his fourth installment of the Lucien series, *Helter Smelter*.	

Friday, November 16

			Location
7:30 am	Registration	**Breakfast Tables** – see description from Thursday.	Pointe Sainte Anne
8:30-10 am	Concurrent Sessions I	#1 Steps to start planning for change – the CPI climate change module; workshop hosted by NB Association of Planners. Elissa Gollan RDPC, Holly McMackin Dillon	Nashwaaksis B
8:30-10 am		#2 Steps to start planning for change; a workshop to explore how the V2R adaptation tool can be used in NB. (in French) Dr. Liette Vasseur Brock University	Pointe Sainte Anne C or D
8:30-10 am		#3 Mapping	
30 min.		A Coastal Flooding, Geo NB & flood widget. Reid McLean DOELG	Barker's Point B
30 min.		B Using maps and other forms of visualization to communicate the risk of climate change. Dr. David Lieske Mount Allison University James Bornemann TPDC	Barker's Point A
30 min.		C Inland flood risk assessment & depth to water table mapping. Dr. Paul Arp, Jae Olgivie University of New Brunswick	Nashwaaksis A
10 am	Nutritional Break	provided	
10:15-11:45 am	Concurrent Sessions II	#4 How do we assess risks to our community's infrastructure? Presentation & discussion. (in French) Jacques Paynter AMEC	Barker's Point B
10:15-11:45 am		#5 How can we use planning tools to engage the community in planning for resiliency? Case studies, presentations, discussion. Sebastien Doiron Beaubasson Planning Commission Alex Forbes City of Fredericton, Scott Fash Genivar	Barker's Point A
10:15-11 am		#6 A The case of the NS-NB transport corridor – evaluating the economic impacts resulting from Climate change. Presentation & discussion. Dr. Yuri Yevdokimov University of New Brunswick	Nashwaaksis A
11-11:45 am		#6 B Assessing adaptation solutions – the economics – Sackville case study. Jeff Wilson Green Analytics	
11:45 am	Lunch	provided	
12:30 pm	Panel Presentations	1. Risk-management today Ernie McGillvery NB Public Safety, Co-chair, National Platform on Disaster Risk Reduction 2. Legal responsibilities of communities André Daigle Les avocats Chiasson & Roy Lawyers (in French) 3. How can climate change adaptation actions be financed? André Chenard NB Environment and Local Government	Pointe Sainte Anne
1:15 pm	Questions		
1:30 pm	Engaging the community	**Building Support** A hands-on workshop aimed at exploring how the community can become engaged in making decisions about their own future. Meet the Collaboration Dragons and put your project consultation plans to the test! Collaboration Dragon Panel: Dr. LietteVasseur Brock University, Roberta Clowater CPAWS Margaret Tusz-King Sackville town councilor Phyllis Mockler-Caissie Director of Strategic Policy and Planning, Department of Healthy and Inclusive Communities Facilitated by Mary Ann Coleman of the NBEN and Sabine Dietz, NB RAC	Pointe Sainte Anne
3 pm	Closing remarks		

Biographies

Dr. Ian J. Mauro
Canada Research Chair in Human Dimensions of Environmental Change
Mount Allison University

Ian is a community-based researcher and filmmaker who works at the interface of the social and ecological sciences. Ian and his research team have been documenting climate change across the region, and are producing case study videos focused on climate, coastlines, communities and adaptation.

Craig Norris
Photographer & Filmmaker

Craig is a documentary photographer and filmmaker. His work examines rural populations, youth subcultures, and the environment. His latest exhibit examines climate change in Atlantic Canada and will be premiered at the ACASA conference.

David Phillips
Senior Climatologist, Environment Canada

David has published several books, papers and reports on the climate of Canada, including two bestselling books, as well as the *Canadian Weather Trivia Calendar*, the most popular calendar sold in Canada. He frequently appears on national radio and television as a commentator on weather and climate matters, has received numerous honours for his service, and was named to the Order of Canada in 2001.

Glenn Davis
Regional Coordinator
Council of Atlantic Premiers
Eastern Canadian Premiers Secretariat
Halifax, NS

Glenn provides administrative support and interprovincial coordination services that allow the Atlantic Provinces to combine their resources and share the benefits of work on coastal and inland adaptation issues.

Dr. Niall O'Dea
Director of the Climate Change Impacts and Adaptation Division
Natural Resources Canada, Ottawa

Niall is responsible for the Adaptation Platform, a structure supporting collaboration between the Canadian government, provinces, territories, industry and others to produce information and tools that regions and key industries need to understand and adapt to the effects of a changing climate on their operations.

Dr. Neil Comer
University of Prince Edward Island
Charlottetown

Neil developed the Canadian Climate Change Scenarios Network website tool while working for Environment Canada. He is currently a Senior Climatologist and Manager of Climate Analytical IT Applications at Risk Sciences International, and adjunct at the University of PEI and University of Toronto-Scarborough.

Réal Daigle
Director/Directeur
R.J. Daigle Enviro®, Moncton

Réal is a consulting meteorologist with 42 years of experience in operational meteorology and scientific program management, including the past 10 years in research related to climate change impacts in the coastal zones of Atlantic Canada. He realizes that strategic climate change adaptation in the coastal zone is critical because in spite of the best greenhouse gas mitigation initiatives, our coastlines are going to be exposed to unsustainable flooding events in the future due to sea-level rise.

Dr. Van Lantz
Faculty of Forestry & Environmental Management, and Department of Economics
University of New Brunswick, Fredericton

A large part of Van's research is focused on estimating economic impacts of climate change on forests, agriculture, and human infrastructures at both regional and global levels.

Jack MacDonald, P. Eng.
General Manager Engineering & Environmental Services
City of Moncton

Jack joined the City of Moncton in 1995 and currently has responsibility for the development and efficient operation and maintenance of the City's infrastructure. He has a keen interest in climate change and is a strong proponent for climate change adaptation.

Serge T. Dupuis, P.Eng., MBA
Manager, Engineering Division
City of Dieppe

As a civil engineer and MBA, Serge feels the current and future changes in our climate will affect all citizens and that it is of utmost importance that we understand and respect these changes while adapting ourselves to their impacts through proper planning.

Dr. Kerry MacQuarrie, P.Eng.
Civil Engineer
Canada Research Chair in Groundwater–Surface Water Interactions
University of New Brunswick, Fredericton

Kerry's research interests include the transport and fate of contaminants in the subsurface and the use of hydraulic, thermal, and geochemical information to understand groundwater-surface water interactions. He has been the project lead, together with Dr. Karl Butler, on "A case study of coastal aquifers near Richibucto, NB: Saline groundwater occurrence and potential impacts of climate change on seawater intrusion".

Richard Keeley
Grand Falls

Richard is currently the Mayor of the Town of Grand Falls and was a municipal councilor from 2008 to 2012. It was during this period that a partnership was formed between the municipality and the NB-RAC in order to study the effects of climate change and erosion along three of the Town's major watercourses, to establish suitable surface water manage practices and planning initiatives.

Biographies Continued

Dr. Mélanie Aubé
Researcher and Project Leader
Coastal Zone Research Institute
Shippagan

Mélanie's expertise lies in forestry, as well as in environmental studies and environmental management. She develops and pilots projects that address environmental issues, which can range from impact assessments, to planning and adaptation, or environmental education, and can touch on social as well as biological and physical issues.

Tracey Wade, MCIP, RPP
Senior Planner
Tantramar Planning District Commission

Tracey has been involved in sustainability and climate change initiatives with the Town of Sackville. She has worked with climate scientists, academics, and GIS professionals to develop communication mechanisms, and has led training sessions on planning for climate change adaptation for planners and municipal representatives at the local, regional and international levels.

J. Kevin Barlow
Chief Administrator
Indian Island Band & Companies

Kevin has overseen a major effort to counter rising sea levels and erosion of Indian Island, a First Nations reserve in NB. His work spans over 3 decades of improving the lives and community. He took great interest after the 2010 storm surge flooding when Elders directed leadership to protect their homeland from future threats.

Patrick Mazerolle, P.Eng.
Resident Engineer DST 3, Construction Branch, Department of Transportation and Infrastructure, Moncton

Patrick, a civil engineer, has been with the department since 2004 and working primarily on road work and structures such as seawalls and bridges.

Lisa Munn
Acting Recovery Manager
Department of Public Safety
Emergency Measures Organization
Fredericton

Lisa has over 20 years' experience as an emergency management specialist and has served as Operations Officer and Senior Operations Officer during events, Administration Manager, and Operational Readiness Manager.

Chris Hand
Manager, Planning and Preparedness
New Brunswick Emergency Measures Organisation

Chris is a retired Army Officer, a community minded volunteer for local soccer and a graduate of UNB with a Masters in History.

Robert Tremblay
Insurance Bureau of Canada

Robert has been with the Insurance Bureau of Canada (IBC) for the past 14 years. As part of the adaptation to climate change file, Robert is leading IBC's development of the Municipal Risk Assessment Tool. He currently sits on a number of committees, and is Chair of the Conference Board of Canada's Council on Climate Change Adaptation.

Elissa Gollan
Planner
Royal District Planning Commission

Elissa has been involved with climate change around Nova Scotia and New Brunswick for several years. She has a particular interest in sea-level rise and coastal impacts and has worked with coastal communities to help recognize vulnerabilities and identify potential adaptation options.

Holly McMackin, MCIP, RPP
Dillon

Holly has a strong background in municipal planning. She has coordinated and managed a variety of municipal planning and policy projects, with a focus on sustainable community planning policy.

Dr. Liette Vasseur
Brock University
Department of Biological Sciences
St. Catharines, Ontario

Liette's research program focuses on climate change, sustainable development, community-based management, conservation, and gender issues in various countries such as Canada, China, and Burkina Faso. Her current projects include a case study on climate change vulnerabilities and adaptation in Sudbury as well as one on coastal communities in Atlantic Canada.

Reid MacLean
GIS Analyst
New Brunswick Department of Environment and Local Government
Fredericton

Reid has worked in the areas of land use planning, sustainable development and environmental stewardship. Since 2010 he has been working closely with the NBELG's Climate Change Secretariat, assisting them in the Regional Adaptation Collaborative by processing lidar data and modeling coastal flooding due to climate change.

Dr. David Lieske
Department of Geography and Environment
Mount Allison University, Sackville

David is the Director of the Mount Allison University Geospatial Modelling Lab (GML). He has an interest in the application of geographic information systems (GIS) to environmental monitoring, mapping, and conservation planning. Current research projects include the spatial visualization of coastal flood risk associated with sea-level rise.

James Bornemann
Tantramar Planning District Commission
Geospatial Modelling Lab at Mount Allison University

James is a GIS Analyst, has a Bachelor of Science in Geodesy and Geomatics Engineering from UNB and is currently completing his Masters of Forestry and Environmental Management.

Biographies Continued

Dr. Paul Arp

Faculty of Forestry and Environmental Management, University of New Brunswick, Fredericton

Paul is a professor of forest soils with expertise in forest watershed hydrology. His work and research team at the UNB's Forest Watershed Research Centre have attracted interest from climate adaptation practitioners as well as from agencies interested in best-management practices across Canada and elsewhere, by enabling the mapping and visualizing of hydrological risks across landscapes and communities at high resolution.

Jae Olgivie

Faculty of Forestry and Environmental Management at the University of New Brunswick, Fredericton

Jae's main area of interest involves the exploitation of LiDAR datasets for fusion and integration with other remotely sensed data, for the enhancement of GIS-based forest process models. He is the primary developer in charge of the continued improvement of UNB's wet areas mapping model.

Jacques Paynter, P.Eng., MCIP

AMEC

Jacques is an experienced project manager with technical expertise related to climate change issues. He has directed the Climate Change Adaptation Measures for the Greater Moncton Area, the Inland Flood Risk Mapping for the Hillsborough Basin in PEI, and numerous climate change adaptation assignments for municipalities.

Sébastien Doiron MÉE, MCIP, RPP

Assistant Director/Planner Beaubassin Planning Commission Beaubassin

Sébastien has been working for more than 9 years in guiding project development and policy initiatives. His principal role has been making land use recommendations to its partnering Councils with an emphasis on promoting sustainable development that takes account of climate change. He has developed a sea level rise by-law that necessitates adaption to storm surges.

Alex Forbes

Assistant Director of Strategic Direction and Consulting City of Fredericton

Alex has a Masters Degree in Urban and Rural Planning from Dalhousie University and a Masters Degree in Business Administration from the University of New Brunswick. He has been employed by the City of Fredericton for the last 21 years in various roles including the development of land use policy as well as overseeing the development process.

Scott Fash

Genivar

Scott has been a planner with Genivar Inc. (formerly Terrain Group) for over 5 years, working on a variety of public and private sector projects. His experience ranges from developing municipal plans and zoning by-laws for several New Brunswick communities to the design and approval of numerous residential and commercial developments across Atlantic Canada.

Dr. Yuri Yevdokimov

University of New Brunswick, Fredericton

Yuri's research interests lie in the field of sustainable development particularly sustainable transportation and sustainable energy and economies in transition. Currently he teaches and conducts research in the areas of climate change impacts on transportation and political economy of emerging economies.

Jeff Wilson

Green Analytics

Jeff is a scientist specializing in the economic dimensions of environmental and natural resource management issues, such as adaptation to climate change. His research interests include the policy application of ecosystem services, non-market valuation, measures of wellbeing, and cost-benefit analysis to inform decision-making.

Ernie MacGillivray

Co-Chair, National Platform for Disaster Risk Reduction Director of the New Brunswick Emergency Measures Organization Fredericton

Ernie was appointed as the Department of Public Safety's Alignment Champion in May 2012. Previously, Ernie played an active role in the transformation and modernization of the emergency management field, and has served as a senior policy advisor and lecturer on broader public safety and security issues.

André Daigle, LL.M., MPlan, MICU/MCIP, UPC/RPP

Lawyer

André specializes in municipal and planning law, as well as public procurement. Before his legal career, André worked with the provincial government as a land use planner. He is an adjunct professor at Mount Allison University and also teaches in both law and geography programs at the Université de Moncton.

André Chenard

Director, Community Funding & Technical Services Branch Department of Environment & Local Government, Fredericton

André has worked with the province since 1981. His current responsibilities involve the management of federal/provincial infrastructure funding programs. His branch is regularly faced with the evaluation of projects that could be impacted by climate change and sea level rise.

Mary Ann Coleman

New Brunswick Environmental Network

Since 1991, Mary Ann has been at the helm of the New Brunswick Environmental Network, a communications network of over 90 environmental groups from across the province. Under her leadership, the network has been a lead partner in developing three innovative multi-stakeholder collaborative initiatives.