

Climate Change Adaptation Strategy for Atlantic Canada

Atlantic Environment Ministers Meeting
June 2008



Dupuis Corner, NB

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1. Introduction

In its November 2007 Summary for Policymakers, the Intergovernmental Panel on Climate Change has reaffirmed that climate system warming is "unequivocal."

Existing developments, infrastructures and proposed activities must "adapt" to reduce risks and vulnerabilities to predicted climate conditions. The ability of communities to adapt will be directly related to how well climate change considerations can be "mainstreamed" into development decisions.

Climate change adaptation came to the forefront as issues of national concern in 2004-2005 when the Canadian Council of Ministers of Environment conducted a scoping exercise to explore possible paths forward. In 2006, the issue was raised among Premiers when the Council of the Federation (COF) began similar discussions. Climate change was subsequently highlighted in the COF meeting of August 2007 at which Premiers released a report on leading practices by provincial and territorial governments.

At the COF 2008 meeting in Vancouver, Premiers agreed that further collaborative work is needed. Concurrent with the COF discussions, the Council of Atlantic Environment Ministers has identified climate change, and especially climate change adaptation, as a key environmental issue for Atlantic Canada.



Placentia,
Newfoundland
Labrador and

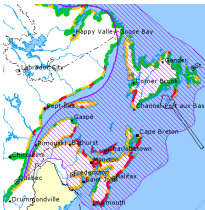
On March 8, 2008, Natural Resources Canada (NRCan) released its National Assessment of Climate Change Impacts in Canada. This documents the vulnerabilities and implications for communities, infrastructure and ecosystems in Canada.

Atlantic Canada is expected to experience more storms events, increased storm intensity, a rising sea level, storm surges, coastal erosion and flooding. Freshwater resources will come under pressure as conditions shift and needs change. Many aspects of the marine fisheries will be negatively affected. Anticipated higher temperatures and longer growing seasons could benefit agriculture and forestry, but increased storm frequency and water variability pose risks. Vulnerability to climate change in the Atlantic region can be reduced through adaptation efforts focused on limiting exposure and through careful planning.

In April 2008, NRCan announced a program for the development of Regional Adaptation Collaboratives to support the advancement of climate change adaptation in six regions across Canada. The opportunity exists for Atlantic Canada jurisdictions to develop such a collaborative.

2. Regional Approach to Adaptation

Atlantic Canada communities are already experiencing the effects of climate change and this will intensify in the future. Sea-level rise, combined with geologic sinking in the Atlantic region, is of particular concern. More frequent and intense storm events, and water variability causing floods and drought, are anticipated. Atlantic communities located in coastal areas and along inland waters, and the infrastructure and resources they rely on, will be increasingly stressed by climate change impacts.



Erosion Risk and Geologic Sinking in the Atlantic Region

Recognizing the importance and benefits of a regional collaborative approach, the Council of Atlantic Environment Ministers supported New Brunswick hosting a regional climate change adaptation workshop on climate change adaptation responses for coastal areas and inland waters issues. The purpose of the workshop was to inform the development of a Climate Change Adaptation Strategy for Atlantic Canada to be considered at the Atlantic Environment Ministers meeting to be held in Wolfville, Nova Scotia, on June 5-6, 2008.

On May 8-9, 2008, the New Brunswick Department of Environment and Natural Resources Canada co-hosted a Climate Change Adaptation Workshop, in collaboration with the other Atlantic Provinces, in Saint John, New Brunswick. The NRCan assessment of the Atlantic region vulnerabilities and implications for communities, infrastructure and ecosystems was instrumental in defining and clarifying the scope of the workshop.



Hurricane Juan, Halifax, NS

The Workshop focused on three common priority areas for the Atlantic region and in part informed the development of the Climate Change Adaptation Strategy for Atlantic Canada. Common priority areas included coastal areas, inland waters and related infrastructure.

There is a recognition in Atlantic Canada that working together on issues of joint concern around climate change adaptation allows the four Atlantic provinces to move beyond what can be achieved individually. Specifically the Climate Change Adaptation Strategy for Atlantic Canada will provide:

- 2.1. A focused centralized approach to addressing common and unique risks, vulnerabilities and opportunities in the Atlantic region;
- 2.2. Direction on matters of regional interest related to the integration of climate change adaptation considerations in decision-making;

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Ice Damage to Wharf, Aboiteau Wharf, NB

2.3. A strategic approach through which the Atlantic region can *climate-proof* development decisions while recognizing unique provincial situations;

2.4. Appropriate integration of the principles of sustainable development, facilitating social progress (social equity), a clean and healthy environment (environmental quality) and economic growth (economic viability);

2.5. Collaborative opportunities with professional associations, such as engineers and planners, and the public and private sectors; and

2.6. A mechanism to engage other stakeholder networks such as those involved in applied sciences and climate change research in the region's universities, as well as community-based organizations that help produce information to facilitate integration of climate change risk and vulnerability considerations into decision-making.



Damage from Hurricane Juan, Charlottetown, PEI

The strategy is intended to recognize and address the complex inter-relationships among environmental, economic and social factors in planning for and implementing current and long-term climate change adaptation actions.

3. Council of Atlantic Environment Ministers' Climate Change Adaptation Commitment



Storm Surge,
Peggy's Cove,
NS

In adopting a Climate Change Adaptation Strategy for Atlantic Canada, the Council of Atlantic Environment Ministers recognizes the significance of climate change and the need to support and encourage adaptive measures particularly with respect to coastal areas and inland water impacts in the Atlantic region. The Atlantic Environment Ministers' commitments on climate change adaptation include:

- 3.1. Moving forward with a collaboration among Atlantic provinces and others to develop effective, regional, long-term climate change adaptation responses that are environmentally effective, economically efficient and socially responsible within the Atlantic region, nationally and internationally;
- 3.2. Delivering significant, on-the-ground "mainstreaming" of climate change adaptation considerations in decision-making through education and engagement of professional organization networks and decision-makers;
- 3.3. Supporting the development and deployment of environmental information, technologies and innovative practice to inform decisions; and
- 3.4. Developing and implementing climate change adaptation measures, including toolkits that actively support a range of adaptation initiatives within the Atlantic region.



Erosion Control
Structure
Failure,
Bathurst, NB

4. Principles and Goals for Climate Change Adaptation in Atlantic Canada

Principles

- 4.1. The Climate Change Adaptation Strategy for Atlantic Canada provides the framework for comprehensive, integrated and long-term planning related to a changing climate that supports and integrates the **principles** of securing social, environmental and economic health.

Goals

- 4.2. The Climate Change Adaptation Strategy for Atlantic Canada **goals** for climate change adaptation include:



Ice Damage,
Maximeville, PEI

- 4.2.1. To enhance the resilience and adaptive capacity of Atlantic Canada public and private sectors to climate change;
- 4.2.2. To integrate climate change adaptation measures in existing and new development activities; and
- 4.2.3. To promote meaningful regional collaboration, coordination and sharing of good practices on integrating climate change adaptation in development decisions.

5. Key Result Areas and Actions for the Climate Change Adaptation Strategy for Atlantic Canada

This section describes three key result areas for action under this strategy. These key result areas recognize and address the complex inter-relationships and linkages among the strategic goals.



Infrastructure Damage, Basin Head Provincial Park, PEI

Key Result Area 1 – Identifying Climate Risks: Adapting to climate change means identifying the risks through a gap analysis and building the tools necessary for resilience of our natural and human-made environments and assisting partners in efforts to reduce their risks and vulnerability to climate change and seek opportunities from a changing climate.

- 5.1. Conduct a gap analysis for risk and vulnerability assessments, including infrastructure, that narrows the scope of the findings contained in the Atlantic assessment of climate change impacts to prioritize areas of the Atlantic region at high risk as well as the critical vulnerabilities to a changing climate in coastal areas and inland waters.



Storm Surge, Lémeque, NB

- 5.2. Improve the relevance and usability of information on impacts of climate variability and climate change, so that it can be used appropriately by development practitioners.
 - 5.2.1. Utilize digital elevation mapping (such as LIDAR) to provide data to investigate the magnitude of coastal changes and provide much-needed information on the risks of sea-level rise on coastal stability. It would also help with emergency preparedness, land use, floodplain and transportation planning, utility and infrastructure risk siting such as saltwater intrusion into drinking water supplies, and assist in forest and agriculture management.
 - 5.2.2. Improve climate monitoring by developing regional capacity for analyzing and interpreting climate observational data, and enhancing the quality of information on sector- and location-specific climate change impacts, as well as the communication of uncertainties associated with climate change projections. This also includes improving information on the costs, distributional and trans-boundary aspects of adaptation activities.

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- 5.3. Develop and apply appropriate tools to address climate risks in development activities and to prioritize responses. Such tools and approaches include screening tools and other methodologies to assess exposure of relevant development activities, long-term development plans, and investments to climate risks, as well as tools to increase the resilience of relevant sectoral activities, decision systems and tools relevant to local planning needs.



Flood Event,
Truro, NS

Key Result Area 2 – Climate Proofing Decisions: *Climate-proofing* decisions means accounting for current and future climate conditions and ensuring our activities/infrastructure is robust enough to withstand climate conditions.

- 5.4. Promote an understanding of climate change and its impacts within the private sector, government departments, agencies and local governments in collaboration with professional partners such as engineering and planning practitioners, academic applied sciences and financial and insurance institutions.
- 5.5. Identify and use appropriate entry points for integrating adaptation to climate variability and climate change into development activities.
- 5.6. Identify and prioritize adaptation responses and, where necessary, help integrate such considerations within a wide range of sectoral interventions and projects.
- 5.7. Periodically assess progress on integration of climate risks and adaptation in development activities and efforts to strengthen adaptive capacities.



Discussing
Coastal
Features at a
Community
Meeting,
Bathurst, NB

Key Result Area 3 - Regional Collaboration: Regional collaboration means strength in working together in areas of common interest, particularly coastal areas and inland waters, and sharing in the development of regional adaptation responses.

- 5.8. Establish through a Memorandum of Understanding, under the Council of Atlantic Environment Ministers, a commitment to collaborate on adaptation and formalizing the Climate Change Adaptation Strategy for Atlantic Canada.
- 5.9. The Atlantic provinces, under the Council of Atlantic Environment Ministers, will submit a single proposal from Atlantic Canada to access funding from NRCan for the establishment of a Regional Adaptation Collaborative (RAC). The RAC will focus on the common

Climate Change Adaptation Strategy for Atlantic Canada

priority Atlantic region issues of coastal areas, inland waters and related infrastructure, with an organizational body to oversee its implementation. The proposal is a key two year initiative as part of the larger Climate Change Adaptation Strategy for Atlantic Canada. The RAC would:



Seawall at Placentia, Newfoundland and Labrador

5.9.1. Encourage regional initiatives that identify gaps and include common actions on impacts and vulnerability assessment and adaptation options, in order to promote and encourage Atlantic region co-operation and avoid duplicated efforts;

5.9.2. Facilitate new analytical work on economic aspects of adaptation, including risks and vulnerabilities, adaptation costs, benefits, and distributional and place-based issues;

5.9.3. Facilitate the access of partnerships with public and private sector funding to carry out the goals of the Climate Change Adaptation Strategy for Atlantic Canada;



Storm Surge Damage, Panmure Island Causeway, PEI

5.9.4. Promote climate risk management, sharing of tools and experiences, adaptation policies and technologies, and disaster risk management in reducing adverse impacts of climate change with particular focus on coastal areas, inland waters and related infrastructure. As these sectors have water as the common element, linkages with other sectors such as agriculture and soil management, fisheries, forests and coastal areas management are directly and indirectly impacted. These other sectors can benefit from activities in the priority sectors.



Flooding from Tropical Storm Chantal, Dunville, Newfoundland and Labrador

5.9.5. The RAC would also create partnerships between all levels of governments, professional associations, the private sector, academia, agencies and institutions, using innovative tools and technologies, and applying best management practices, with alternative adaptation strategies that position the region as a leader in climate change adaptation for coastal areas and inland waters (see Figure 1 in the Appendix).

5.9.6. The RAC will consist of a Board of Directors from:

5.9.6.1. Each provincial jurisdiction;

5.9.6.2. Private sector partners;

5.9.6.3. Regional professional and municipal associations; and

5.9.6.4. Federal representation.

6. Progress Measurement and Accountability

- 6.1. Specific and objective performance measures will be developed for each Key Result Area. Actual performance measures will be developed as part of work planning necessary to implement the strategy. Examples may include:
 - 6.1.1. Establishment of a baseline with respect to the number of communities that have adopted appropriate planning processes to address climate change risks, with progress measured in terms of change against that baseline.
 - 6.1.2. An increase in the number of communities that have incorporated climate adaptation into their emergency measures procedures.
 - 6.1.3. The development and application of adaptation toolkits incorporating information and knowledge from such measures as:
 - 6.1.3.1. Increases in the total land area that has received digital elevation mapping (e.g. LIDAR).
 - 6.1.3.2. Increases in the number of communities that have received local-level climate change forecasts (global climate-model downscaling).
 - 6.1.4. Completion of detailed risk and vulnerability assessments for Atlantic provinces and communities.
- 6.2. Progress under this strategy, relative to the established performance measures, will be assessed annually with results reported back to investors/stakeholders.



Storm Surge, Crowbush Golf Course, PEI

7. Governance

This section describes the governance structure for implementing the key result areas for action under this strategy.



Community Meeting on Sea-level Rise, LeGoulet, NB

- 7.1. The Climate Change Adaptation Strategy for Atlantic Canada will be adopted for a five-year period with a requirement for an annual jurisdictional progress report to the Council of Atlantic Ministers of Environment. To facilitate implementation, a regional governance body will be established.
- 7.2. The regional governance body will be composed of representation from each province and will be supported by appropriate staff. It would act as a regional coordinating body for planning, applied research and educational/outreach expertise for the advancement of key result areas.

8. Appendix

Figure 1

Proposed Structure for a Regional Adaptation Collaborative

