

Climate Change in Newfoundland and Labrador

There is broad scientific consensus on the reality of climate change. It is happening, and it has serious implications—for our health, our economy, and our future.

Human activities, including the heavy use of fossil fuels for heating, transportation and electricity, release greenhouse gases that are accumulating and causing global warming. Average global temperatures are rising—the 20th century was the warmest the world has seen in 1,000 years, and the 1980s and 1990s were the warmest decades on record. As a northern country, Canada will feel the impacts of climate change more than most countries.

Over the next 100 years, temperature increases of 3 to 4°C are projected for the Atlantic Provinces. Changes in precipitation patterns and an increase in extreme events are also anticipated. These climate changes are expected to be the largest and most rapid of the last 10,000 years and will have profound effects on our lives and the ecosystems that support us.

Sea ice

In the short term, climate change may increase the number of icebergs, which could be hazardous to ships. In the long term, climate change is projected to reduce the thickness and extent of sea ice. This may lengthen the shipping season and reduce the need for icebreakers. However, less sea ice will also increase the exposure of beaches to winter storm waves, and increase both coastal erosion and storm damage to buildings and structures like piers. In some areas of Newfoundland, surveyors have already observed considerable erosion along the coastline.

Changing ecosystems

Warmer temperatures and changing precipitation patterns are expected to affect the distribution, health, and accessibility of wildlife and fish. Changes in river flow,

such as earlier ice breakup, stronger spring runoff and reduced summer flow, would impact several species, including the threatened Harlequin duck of Labrador.

Marine species

Changing temperatures are expected to influence the numbers and distribution of some fish species. For example, cod are strongly influenced by water temperature. Between 1900 and 1920, warmer temperatures allowed cod to migrate northwards, and then when the water temperature dropped after 1930, they retreated southwards. Cod size is also affected by temperature, with larger cod found in warmer waters. Significant warming of fresh water bodies could also affect the numbers and distribution of trout and salmon.

Rising sea level and vanishing coasts

Rising sea levels will affect sensitive low-lying coastal areas. Salt marshes and lagoons that are currently freshwater could be flooded by seawater, affecting the habitat of fish and wildlife. Barrier beaches may recede, and there may be increased erosion along some of the coastline. Erosion such as that threatening the lighthouse at Pointe Verde, Newfoundland will become more prevalent in the future.

Bodies of water

Hydroelectricity is an important source of power in Newfoundland and Labrador. Long-term changes in annual precipitation would affect overall generation capability, although electric power systems with dams and reservoirs are likely to be able to adjust their operating practices to accommodate these changes. However, hydroelectric systems without

reservoirs would be more vulnerable to changes in precipitation levels.

Lowered water levels or decreased river flows in some areas could lead to poor water quality. Increases in temperatures, prolonged summer seasons, and heavier rainfall could also increase the risk of waterborne parasites, such as *Giardia* and *Cryptosporidium*, contaminating drinking water.

Storm surges and coastal flooding

Storm surges form when low-pressure weather systems and strong onshore winds combine to raise the water level a metre or more above normal. As sea level is expected to rise dramatically over the next century, storm surges will be able to flood areas never before flooded. Flooding is already a problem in Newfoundland and Labrador, where flood damages over the last 15 years have exceeded \$40 million.

Taking Action

Given the potentially serious and long-term nature of the risks associated with these impacts, the only prudent course is to take action now to reduce the emissions that contribute to climate change. Analysis shows that the impact on Canadian jobs and economic growth associated with reducing greenhouse gas reductions can be kept modest and manageable relative to the strong growth expected over the next decade.

To give a sense of the possible order of magnitude of the impacts on industry, the estimated economic impact of implementing steps one and two in the Climate Change Plan for Canada to meet Canada's Kyoto commitments ranges from -0.4 percent to -1.6 percent of Canada's gross domestic product, dependent on various assumptions. This is a modest impact relative to the strong economic growth expected over this period.

Analysis shows job growth of 1.08 to almost 1.26 million jobs by 2010, compared to just over 1.32 million in a business as usual scenario. That means a delay in job creation of about 62,000 jobs across Canada in the year 2010. By comparison, the Canadian economy is currently creating new jobs at a rate of about 46,000 per month.

Estimates indicate that with the implementation of actions to reduce greenhouse gas emissions, Newfoundland and Labrador's provincial gross

domestic product in the year 2010 would grow to a level that would be about 0.17 percent less than in a business as usual scenario. Growth in new jobs would slow by approximately 0.5 percent, or a delay in job creation over the next eight years of about 1,100 new jobs. Over the past year, there was a net loss of approximately 1,200 jobs in Newfoundland and Labrador.

These economic forecasts do not reflect the significant environmental and health benefits to be gained by addressing climate change. Taking action will provide broader benefits including cleaner air, reduced health costs and other environmental and social benefits for Canadians.

The impact on personal disposable income by 2010 would be approximately 0.16 percent less than business as usual. Relative to what they would otherwise be, electricity prices could drop by approximately 0.06 cents/KWh. Gasoline prices

are expected to remain at their business-as-usual level in 2010.

An illustrative example of production increases for major industrial emitters in the province as a result of measures to reduce greenhouse gases (national averages) is as follows:

- **electricity** – oil would rise by 0.12 cents per KWH or 1.57 percent

The Plan foresees a four-fold increase in Newfoundland offshore oil production. The modelling has also made allowances for increased greenhouse gas emissions associated with the new Voisey's Bay mining and smelter operations. There is every reason to believe that Newfoundland and Labrador's economic development will be essentially unaffected by the Plan.

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Canada's approach to reducing greenhouse gas emissions is designed to minimize costs and maximize opportunities for Canadian technology. It envisions an economy that is based on cleaner sources of energy, using leading edge technologies. The Plan proposes strategic investments in innovative climate change proposals and the creation of a Partnership Fund that will cost-share well as municipalities, Aboriginal communities and the private sector.

By drawing on Canadian innovation, and by ensuring that different sectors of the economy, regions and consumers play a role in taking action on climate change, the impact is more manageable for all. Working together, Canada can position itself as a strong competitor as the world moves to a new, less carbon-intensive economy.

Newfoundland-based companies and communities are already showing leadership in meeting the challenges of climate change¹:

- Through a program known as Climate Change Action: The Job Begins at Home, youth-driven Eco-Teams are providing HomeGreenUp and EnerGuide assessments to homeowners throughout the province. Residents learn how to reduce greenhouse gas emissions and energy and water consumption, divert waste and curb harmful transportation practices.

- On September 12, 2002, Conservation Corps launched the Climate Change Education Centre – a Web site providing tools and facts about the impacts and adaptations of climate change for Newfoundland Labrador. The project was sponsored by The Government of Newfoundland and Labrador, the Government of Canada, and Newfoundland and Labrador Hydro.

¹ Examples are taken from the public record.

**To find out more about what the Government of Canada is doing
and what you can do,**

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