

# Prince Edward Island

## ***Climate Change in Prince Edward Island***

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 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.

### **The air we breathe**

The number of “bad air days” caused by smog events is expected to increase due to climate warming. Smog is a mix of pollutants, including nitrogen oxides (NO<sub>2</sub>) and volatile organic compounds (VOC), which react together in sunlight to form ground level ozone. This ozone is harmful to human health, causing impaired lung function, increased hospital admissions, and premature death. The very young, the elderly, and those with chronic lung diseases, such as asthma, are at the greatest risk.

### **Agriculture**

Agriculture is the largest industry in PEI. Although a longer, warmer summer would lengthen the growing season and increase the yield of warm-weather crops, these conditions could also result in more

droughts and a greater need for irrigation. Warmer winters may benefit agriculture, by reducing winter kill of forage and fruit, yet create problems for farmers by increasing the range and abundance of insect pests.

An increase in extreme weather events, such as storms, hail, floods, and drought, may be the greatest concern for agriculture. These events damage crops and livestock, and can affect hydro power availability and power lines.

### **Aquaculture**

Aquaculture is a rapidly expanding industry in PEI. The province’s estuaries are ideally suited for the cultivation of shellfish, particularly mussels and oysters. PEI also has fresh water trout and char farms.

For some shellfish species, such as oysters, a long, warm summer may improve the conditions for growth and reproduction.

Oysters hibernate in winter, so warmer, shorter winters may favour their winter survival. On the other hand, species such as mussels prefer cooler water and warm summer temperatures can be more stressful. Warmer, shorter winters may result in poor ice conditions that hamper winter harvest of mussels. Increases in extreme weather events can be a concern for all aquaculturists. Storms can damage culture equipment and result in loss of stocks. Erosion of land can result in heavy silt forming in rivers, which can be stressful for cultured fish or, when reaching the estuaries, can smother oysters being grown on the river bottom.

### **Changing ecosystems**

The dune systems, marshes, and ponds of Prince Edward Island National Park provide critical habitat for migratory shorebirds. The higher sea levels expected to result from climate change will threaten this habitat, and place stress on shorebird populations. The distribution and population of key fish species may also be affected by climate change, as fish are extremely sensitive to temperature.

### **Rising sea level and storm surges**

Much of the coast of Atlantic Canada is highly sensitive to the effects of sea level rise. The most sensitive coasts are low-lying, with salt marshes, barrier beaches, and lagoons. Projected consequences of sea level rise include increased erosion, rapid migration of beaches, and flooding of coastal freshwater marshes.

Storm surges form when low pressure and strong onshore winds combine to raise the water level a metre or more above normal. As warmer temperatures cause sea levels to rise dramatically over the next century, storm surges will be able to flood areas never before flooded. For example, a storm surge of 4.2 m, combined with a 0.5 m sea level rise, would place over 300 properties in Charlottetown at risk.

Rising sea levels and storm surges may also destroy popular beaches and dunes, and damage heritage buildings. This will affect tourism, which is the second most important sector of the province's economy.

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## ***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 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, Prince Edward Island's provincial gross domestic product in the year 2010 would grow to a level that would be about 0.36 percent less than in a business as usual scenario. Growth in new jobs would slow by approximately 0.4 percent, or a delay in job creation over the next eight years of about 300 new jobs. To put this into context, PEI's economy created approximately 1,600 jobs over the past year.

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 0.31 percent less than business-as-usual. Relative to what they would otherwise be, electricity prices could drop by 0.57 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 – gas** would rise by 0.04 cents per KWH or 0.60 percent
- **electricity – oil** would rise by 0.12 cents per KWH or 1.57 percent

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 emission reductions in collaboration with provincial and territorial governments as 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.

Prince Edward Island-based companies and communities are already showing leadership in meeting the challenges of climate change<sup>1</sup>:

- PEI is at the forefront of renewable energy technology as home to the first wind farm in Atlantic Canada. For over two decades, the Atlantic Wind Test Site has provided world-class research into the capacity of wind energy. Now, Islanders and the environment are benefiting. A partnership between the federal and provincial governments, Prince Edward Island Energy Corporation and Maritime Electric Corporation has seen the addition of a commercial wind farm to the North Cape Site, that is providing a clean and renewable source of electricity to the Island.
- Renewable energy is a key component of addressing climate change. Already, with Government of Canada support — and partners

such as Suncor and Enbridge – windmills are generating electricity in Prince Edward Island. This green energy is helping people power their homes in Prince Edward Island.

- Reducing emissions associated with transportation will also be important in Canada's efforts to meet our Kyoto commitments. In an effort to raise awareness of transportation issues, the Environmental Coalition of Prince Edward Island developed the Sustainable Transportation Initiative. The project aims to identify barriers to alternative modes of transportation, encourage the use of alternative methods of transportation, establish a PEI ride sharing network, and offer businesses energy use assessments and recommendations on the reduction of energy use.

<sup>1</sup> Examples are taken from the public record.

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

please call 1 800 O-Canada (1 800 622-6232), TTY 1 800 465-7735

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