

# CLIMATE CHANGE

## IN PRINCE EDWARD ISLAND

**Around the world, our climate is changing. Average global temperatures are rising – the 20<sup>th</sup> century was the warmest the world has seen in 1,000 years, and the 1980s and 1990s were the warmest decades on record.**

Human activities are upsetting the balance of greenhouse gases, such as carbon dioxide, in our atmosphere. Our heavy use of fossil fuels for heating, transportation and electricity, releases carbon dioxide and other greenhouse gases. These gases are accumulating in our atmosphere and causing the Earth to “heat up”.

Over the next 100 years, temperature increases of 3-4°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.



### **On the farm**

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 winterkill 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.

### **Farming the water**

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.



John Sylvester

Mussel Farming, St. Peters Bay, PEI

**Climate Change. Are you doing *your bit*?**

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.

Information in this fact sheet is derived from  
"The Tides of Change:  
Climate Change in Atlantic Canada"  
View online at  
[www.adaptation.nrcan.gc.ca/posters](http://www.adaptation.nrcan.gc.ca/posters)



## 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 component of the province's economy.

## What can you do?

Actions by individuals account for 28 per cent of Canada's greenhouse gas emissions – that's almost six tonnes per person per year! If we're part of the problem, we can be part of the solution, too. By reducing the amount of energy you use at home and on the road, you can save yourself money and contribute to the global challenge of reducing greenhouse gas emissions. Small actions, like installing low-flow showerheads or not idling your car, can make a big difference.

### Want to know more about climate change?

Visit the Government of Canada climate change Web site at:  
[www.climatechange.gc.ca](http://www.climatechange.gc.ca)  
or call toll-free: 1 800 O-Canada  
(1 800 622-6232)  
or TTY 1 800 465-7735 and ask  
for a climate change information kit.

Canada

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