# CLIMATE CHANGE

## IN NOVA SCOTIA

**Around the world, our climate is changing. 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.**

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 3-4ºC are projected for the Atlantic Provinces. Changes in precipitation patterns and more 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 ocean

Scientists predict that climate warming will change ocean temperatures and affect marine ecosystems. Fish are sensitive to temperature, therefore changing temperatures would influence the distribution and population abundance of some species. Furthermore, climate warming may increase the range and extent of the organisms responsible for toxic algae blooms, such as red tides. Toxic blooms pose a serious threat to both fish populations and human health.

Agriculture and Agri-Food, Canada

### On the farm

A longer, warmer summer would lengthen the growing season and increase the yield of warm-weather crops, such as corn, soybeans, and grapes. However, 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, but create problems for farmers by increasing the range and abundance of insect pests.

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

### Rising sea level and storm surges

As temperatures warm, oceans will expand, causing sea levels to rise. Canadian research suggests that sea levels on the Atlantic coast of Nova Scotia could rise by 70 cm. by 2100.

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

The majority of the Atlantic coast of Nova Scotia is highly sensitive to rising sea levels. The most sensitive areas are low-lying salt marshes, barrier beaches, and lagoons. Higher sea levels will cause increased erosion, smaller or disappearing beaches, and flooding of coastal freshwater marshes. They will also affect coastal infrastructure, such as bridges, wharves, breakwaters, and roads.

Storm surges form when low pressure and strong onshore winds combine to raise the water level a metre or more above normal. As sea levels rise dramatically over the next century, storm surges will be able to flood areas never before flooded. Low-lying coastal areas will be the most threatened.

## 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 ($NO_2$) 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.

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**

## Freshwater issues

Changing stream flow patterns and rising sea levels could threaten the province's water resources. Over recent years, stream water volumes have been decreasing. This trend will likely continue as the climate warms. Meanwhile, sea level rise spurred by warming oceans and melting glaciers, will increase the risk of saltwater intrusion into groundwater aquifers.

## Forests in peril?

Climate change may increase the risks to forests in Nova Scotia. For example, warmer winter temperatures may allow invasive insects, such as the gypsy moth, to become more pervasive, while warmer, drier summers would increase the threat of forest fires in the province.

Forest type may also be affected by climate change. As temperatures increase, the province's boreal forests may gradually be replaced by temperate forests. However, the rate and extent of change will be limited by soil conditions and vegetation life cycles.

## 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**
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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