

# CLIMATE CHANGE

## IN BRITISH COLUMBIA

**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. Climate models project that average global temperatures will rise by another 1.4°C to 5.8°C by the end of the 21<sup>st</sup> century. Warmer temperatures will cause changes in other parts of the climate system, including precipitation, air and ocean currents, and cloud cover.**

The majority of experts have concluded that human activities are responsible for most of the warming observed over the last 50 years. The burning of fossil fuels for transportation, electricity, and heating, as well as deforestation and industrial and agricultural processes, release carbon dioxide and other greenhouse gases. These gases are accumulating in the atmosphere, causing the Earth to warm.

In British Columbia, average annual temperatures warmed during the 20<sup>th</sup> century by 0.6°C on the coast, 1.1°C in the interior, and 1.7°C in the north. Average spring and night-time temperatures in

particular are now warmer than they were 100 years ago. Precipitation increased by 2 to 4 percent per decade in southern British Columbia. Climate models project that the greenhouse gases already in the atmosphere will continue to drive climate change for centuries to come. By the end of the 21<sup>st</sup> century, average temperatures in British Columbia will likely be 1°C to 4°C warmer, depending on the region, than they are now.

Changes of this magnitude can have significant impacts on the natural systems that support us.



### Low-water blues

Glaciers in southern British Columbia retreated during the 20<sup>th</sup> century. Lakes and rivers now become free of ice earlier in the spring, and the Fraser River is discharging more water earlier in the year. These trends point to lower summer flows in some streams and rivers, and less water for agriculture, hydro-electric power generation, industry and communities. This may pose significant problems in drier regions such as the Okanagan, where water is already in short supply.

### Salmon in hot water

The average summer temperature of the Fraser River increased by 1.1°C over the past 50 years.



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

A warmer climate may pose problems for salmon as they migrate upriver to spawn. Salmon are sensitive to temperature; warmer water can deplete their energy reserves, and make them more vulnerable to stress, infection, and disease.

If summer river temperatures continue to rise, fewer fish may make it successfully upriver to their spawning grounds, and some salmon populations may be at risk.

## The air we breathe

A number of B.C. cities, including Nelson, Penticton, Prince George, Vancouver, and Williams Lake, lie within valleys that trap polluted air. Airborne pollutants worsen asthma, impair lung function and can even cause death. In the Lower Mainland, if summers become warmer, "bad air days" and their related health costs will likely increase. In the interior, if winters become warmer, and residents use less woodfuel for heating, air quality may improve.

## Rising Seas

Sea levels rose along most of the B.C. coast during the 20th century. Higher sea levels increase the risk of



flooding in low-lying coastal areas. They may inundate wetlands, beaches, dunes, and other sensitive coastal ecosystems, and threaten Aboriginal heritage sites. They may also create drainage problems and overwhelm municipal sewage systems. Low-lying agricultural lands may become too saline for cultivation. Waterfront homes, wharves, roads and port facilities may be at risk during severe storms.

## Forests in transition

In summer, warmer temperatures may promote increased evaporation, and loss of soil moisture. Grasslands may replace forest in areas that become too dry for trees. Higher temperatures and drier summer conditions may increase the frequency of forest fires. Forest disease and pest infestations may also increase

as warmer summers place additional stress on trees, and warmer winters increase pest survival.

## What can you do?

While we cannot prevent climate change, we can slow down the rate at which it happens by reducing greenhouse gas emissions. Individual British Columbians can be part of the solution. By reducing the amount of energy we use on the road and at home, we can save money and help reduce greenhouse gas emissions. Small actions, like taking the bus or riding a bicycle, can make a big difference. We will also need to adapt to the expected impacts of climate change, for example, by using water wisely, situating new buildings away from shorelines, and being prepared for severe weather events.

Information in this fact sheet is derived from "Temperature Rising: Climate Change in Southwestern British Columbia", view online at [www.adaptation.nrcan.gc.ca/posters](http://www.adaptation.nrcan.gc.ca/posters) and from "Indicators of Climate Change for British Columbia, 2002" available online at [www.gov.bc.ca/wlap](http://www.gov.bc.ca/wlap)

### 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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