CLIMATE CHANGE

IN THE YUKON

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".

In the Yukon, both temperature and precipitation are expected to increase due to climate change. Climate models project that over the next century, temperatures could rise by 2-6°C. Fall storms and day-to-day weather variability are also predicted to increase. These climate changes will have profound effects on our lives and the ecosystems that support us.

Northern landscapes

Permafrost, or perennially frozen ground, can be found in a significant portion of the Yukon. In the southern Yukon, permafrost is discontinuous and may only be present beneath 10% of the land area. Further north, the proportion of permanently frozen land increases. In a large part of the Yukon, permafrost is only a few degrees below 0°C. If the climate warms by up to 5 degrees in the next 50-100 years, seasonal thaw will increase and permafrost will become thinner or ultimately disappear.

Permafrost melt will increase the risk of landslides, which damage infrastructure, reduce water quality, and harm fish and wildlife. It may also substantially alter ecosystems and landscapes in areas such as the Old Crow flats. Permafrost melt also threatens the structural integrity of older buildings, water supplies and waste disposal structures.

Industry

Climate change has the potential to significantly affect existing and future Yukon commercial and industrial activity, with impacts on the territory's economy.

Changes to precipitation could require costly upgrades and redesign of tailing dams and water diversion structures in the Yukon's mining industry. As well, an increase in the frost-free period could affect access to many oil and gas exploration sites, now reached via winter roads built on frozen ground. More erratic winter conditions could affect the developing film production sector, as one of the major factors in its success in the Yukon has been the ability to provide snow much earlier and much later than in other locations.

On the other hand, longer, warmer summers could increase the number of visitors to the Yukon and increase the growing season to enable cultivation of a wider variety of crops and increased yields.

Climate Change. Are you doing your bit?

Life on the land

Climate warming will increase the availability of food for plant-eating animals. However, changes in the timing and location of food sources, an increase in parasites and insect-borne disease, and more insect harassment may lead to declines in some animal populations. Caribou herds may be especially sensitive to these changes.

For birds in northern regions, warming may extend nesting periods, provide more food for young, and decrease chick mortality. Conversely, in the southern regions, warming may reduce breeding and forage habitats.

Forest resources

In central Yukon, the number of forest fires and the amount of hectares burned has been increasing since the 1960s. This trend is expected to continue into the future, as temperatures warm and lightning storms become more frequent. Spruce Bark beetles killed almost all of the mature white spruce over some 200,000 hectares in the Alsek River corridor in Kluane National Park and in the Shakwak Valley north of Haines Junction between 1994-1999. A series of mild winters and springs provided good breeding conditions for the beetles, allowing them to multiply rapidly.

Water resources

Climate change will likely affect hydropower generation in the Yukon. While the net effect is uncertain, increases in the amount of water runoff may boost hydropower capacity, while possible heavy storms and sediment loading may reduce its potential. Spring flood damage could be more severe and frequent along coastal rivers and streams and throughout Yukon's interior.

What can you do?

Actions by individuals account for 28 % 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. Preparing now for inevitable changes is also part of the response.

Canadian Forestry Service, Victoria

Forest Devastation due to the Spruce Bark Beetle

Information in this fact sheet is derived from **"Taking the Chill Off?: Climate Change in the Yukon and Northwest Territories"**
View online at **www.adaptation.nrcan.gc.ca/posters**

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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Cat. No. M27-01-1720E

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