



# Water Supply

## Why is our climate changing?

The atmosphere of the earth contains the air that we breathe, protects us from radiation and keeps our planet warm. Gases in our atmosphere, called "greenhouse gases", hold in the heat. About a hundred and fifty years ago, we began to burn large amounts of fossil fuels (oil, coal and natural gas) to create power and heat. These fuels release carbon dioxide and other greenhouse gases into our air. In fact, billions of tons of greenhouse gases are added to the atmosphere every year. This is like throwing an extra blanket on the bed - it traps in more heat and warms our planet, causing our climate to change. And this will, in turn, affect our weather.

Average temperatures in Canada are already rising. Scientists predict that, over the next century, Canada will be 1.5°C - 5°C warmer in the South and as much as 5°C - 7°C warmer in the North. Even a small increase in the average yearly temperature could have serious consequences that would affect our health, and especially that of our children.

## How will our water supply be affected?

Climate change will very likely alter the pattern of rainfall that contributes to our water supply. Depending on where you live in Canada, our changing climate could mean your area will have less rainfall, with the potential of droughts, or too much rainfall, with the possibility of floods. Either way, climate change is likely to affect the amount and quality of Canadian's drinking water.

Too little rain can cause droughts that result in wells, springs or underground "aquifers" going dry. Droughts can also cause whatever chemical pollution or disease-causing microbes there are in the water to be concentrated in the

small amount of water that is left. This raises the risk that harmful bacteria or chemicals will be found at higher and more dangerous concentrations in our water than usual.

Too much rain can also have serious consequences for water supply and quality. Heavy rains can cause flooding of sewage and storm sewers and force residues of chemical pesticides and fertilizers, as well as animal waste from farms, into the water systems. Run-off from industrial sites and landfills also becomes a risk to our drinking water when floods occur. Although water treatment plants can remove contaminants, some plants cannot cope with all pollutants that are washed into our water supply during floods.

## What are the dangers?

Bacterial contamination happens when water comes into contact with human or animal wastes and drowned livestock. This can easily happen during floods. Such type of contamination is also common when small animals inadvertently fall into surface wells and drown undetected.

Most waterborne diseases are caused by bacteria such as *campylobacter*, *E. coli*, *cryptosporidium*, *giardia* and *Toxoplasma gondii* (a disease caused by exposure to cat feces). Exposure to these bacteria can lead to severe vomiting and diarrhea, cramping and fever. In infants and children, dehydration caused by vomiting and diarrhea can be fatal. *T. gondii* has also been associated with miscarriage, stillbirth or, if the fetus survives, can result in impaired vision, deafness, and mental disabilities.

Contamination from toxic chemicals can also cause serious problems. Flooding of farms and golfcourses can cause chemical pesticides and fertilizers to be swept into waterways, and eventually, drinking water. Residues of fuels or industrial chemicals can also become waterborne during heavy rains and floods. Landfill sites that contain toxic

waste from household cleaners, paints, plastics, garden pesticides, fuels and other toxic substances used in everyday life may also become a source of chemical contamination during flood conditions.

Exposure to toxic chemicals in drinking water could occur over long periods and result in the gradual accumulation of chemicals in the body. Risks associated with exposure to these chemicals include damage to the immune, reproductive and nervous systems. Many chemical toxins are also associated with certain types of cancers.

### CHILDREN are at greatest risk!

- Because children are still developing, their systems are much more likely to be affected by exposure to chemical toxins and bacterial contamination than adults.
- Hormonal disturbances, stunted growth, mental disabilities, behavioral and developmental problems and cancer have been associated with exposure to chemical toxins.
- Exposure to bacterial contaminants can lead to severe vomiting and diarrhea that puts children at risk of dehydration.
- Children are not usually aware that the water they drink or swim in has been contaminated and require strict supervision during periods of water contamination.

### What can YOU do to fight climate change?

All Canadians contribute to greenhouse gas emissions - every time we do anything that uses energy. In fact, the actions of individual Canadians account for 28 percent of Canada's total greenhouse gas emissions - that's almost 5 tons per person per year!

### Cut back your use of energy

- Car pool, walk or cycle to reduce your car use.
- Buy a fuel-efficient car.
- Every year Canadians idling their cars produce almost 4,000 tons of carbon dioxide and other pollutants! Avoid idling your vehicle - ten seconds of idling uses more fuel than restarting your engine.
- Add extra insulation to your house and use weather stripping and caulking to seal windows and cracks where heat escapes from your home. This will reduce greenhouse gas emissions and could save up to 20 percent on your heating bill.
- Turn down the heat in cold weather and use fans on warm days. Be sure to drink plenty of fluids during all warm weather because of an increased risk of dehydration.
- Upgrade your windows to the energy efficient types.
- Plant a tree - a large tree can help keep your home cool, protect it from wind and trees absorb carbon dioxide - a greenhouse gas!

### Get Active!

Take your concern about climate change to your Member of Parliament, MPP and local politicians. Tell your elected officials and utilities operators that you support efficient and environmentally friendly sources of energy. Use your consumer power to support new, green technologies.

### Get Informed!

To learn more about the impacts of climate change on your children's health, visit the Canadian Institute of Child Health website at [www.cich.ca](http://www.cich.ca). For more information about climate change and what you can do, visit the Government of Canada climate change website at [www.climatechange.gc.ca](http://www.climatechange.gc.ca) or call 1-800-O-CANADA (1-800-622-6232).

Funding provided by the Climate Change Action Fund

**Canada**

*This publication does not necessarily represent the views of the Government of Canada.*

*Ce feuillet d'information est également disponible en français*



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