

**SOURCES:**

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**IMAGE CREDITS:**

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Charts: Environment Canada and Roger Handling

# PARKS IN THE GREENHOUSE

David Suzuki Foundation

Finding solutions



For more information:

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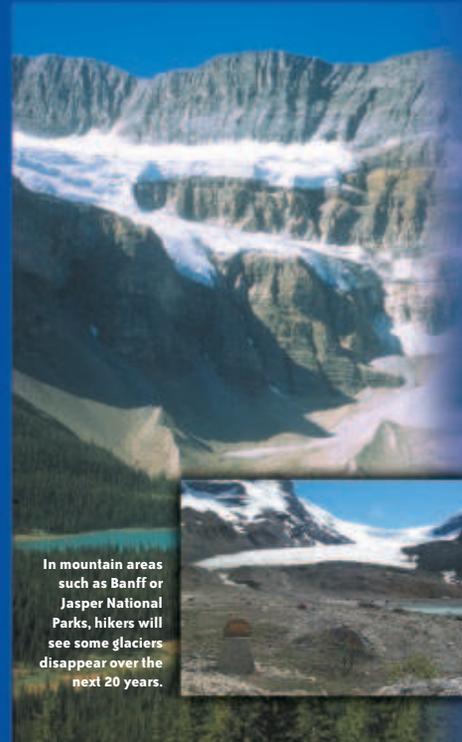
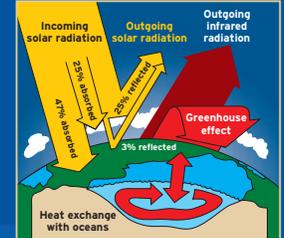
CANADA,  
 CLIMATE CHANGE,  
 AND NATURE



The Earth's climate is changing—and parks are not immune. Global warming is already having serious consequences for species and their habitats. In the future, parks and wilderness areas across Canada could look very different than they do today. But we can help nature cope with climate change.

**THE GREENHOUSE EFFECT – keeping the earth warm naturally**

The greenhouse effect is the natural process that keeps the planet warm and enables it to sustain a great diversity of life. It occurs when gases in the atmosphere trap heat from the sun, preventing the heat from escaping the Earth's surface. This process acts like a greenhouse.



In mountain areas such as Banff or Jasper National Parks, hikers will see some glaciers disappear over the next 20 years.

**WE'RE OVERHEATING THE GREENHOUSE**

We are affecting the Earth's climate by magnifying the greenhouse effect. Human activities like burning fossil fuels, clear cut logging and agriculture, are releasing more greenhouse gases into the atmosphere, leading to changes in global climate.

A rise in temperature of just a few degrees can profoundly disrupt ecosystems. Globally, scientists predict that over the next century average temperatures will rise 1.4°C to 5.8°C. Because of Canada's northern latitude, temperature changes are expected to be double the global average in some areas.

Many Canadians are already noticing changes in our climate: warmer, drier summers, more droughts and heat waves, an increase in the frequency and severity of extreme weather events, dropping water levels, and more serious smog episodes. In some parts of the country, communities that depend on forestry, fishing, and farming are already feeling the effects on their way of life. **Parks and other protected areas are also beginning to feel the heat.**



Wind power is the fastest growing form of energy in the world and one of the many solutions to climate change.

# CLIMATE CHANGE

## CLIMATE CHANGE – species on the move

Climate patterns are crucial in determining where plants and animals live. As climate conditions change, some areas become inhospitable for certain species because there is less

water, higher temperatures, or their food source is affected. Other areas may become more inviting to new species, such as non-native plants and animals, that may invade native species' habitat.

As a result of changes like this, ecosystems will shift and the ranges of plants and animals will change—in some cases, ten times faster than during the last ice age. In Canada, this will push many ecological communities further north, or to higher elevations.

Scientists have shown that 45 percent of Canada's habitat could be displaced by the end of this century,

resulting in as much as a 20 percent loss of species in vulnerable areas such as the Arctic and boreal forests. Entire landscapes in much of Canada will change and parks across the country will feel the impacts.



Birdwatchers can expect to see critical wetland habitat disappear, disrupting the migratory routes of many bird species.

Boreal forests are expected to shift northwards by as much as 100 to 700 km. This will affect prime habitat for migratory birds like whooping cranes in Wood Buffalo National Park and American white pelicans in Prince Albert National Park. We can expect to see more insect infestations in forests due to mild winters like the bark beetle outbreak that is currently affecting lodgepole pine forests in British Columbia.



American white pelicans require boreal forest habitat to breed.



Those who enjoy recreating in the wild will see changes in species and their habitat.

Effects on prairie grasslands and wetlands are likely to be devastating. Climate change will result in more extreme variability, more severe drought and increased temperature in lakes and rivers.

For those who enjoy fishing, significant changes in water levels and temperatures threaten to reduce freshwater fish

As water levels fall in lakes and rivers, many paddlers will notice the difference.



populations. Paddlers in Ontario and Quebec could see lakes drop as much as 1.3 metres by 2050.

The Arctic will experience the greatest impacts. Warmer conditions will adversely affect animals like polar bears, ringed seals, arctic foxes and hares that depend on sea ice and snow conditions for food, shelter and for camouflaging their young from predators.



Polar bears are already struggling with climate change. Forest fires are expected to be more frequent and severe in boreal forests.

Colourful alpine meadows like those at Mount Revelstoke National Park will be replaced by forest. Temperature and precipitation changes will also increase snow packs, impairing the movements and survival of animals such as mountain goats and caribou.

Coastal Atlantic parks like Prince Edward Island and Kouchibouguac National Parks are threatened with more intense storms that will increase erosion and damage sensitive vegetation of nearshore cliffs and salt marshes. An increase in ocean temperatures will also affect seabirds and their food supply.

On the Pacific Coast, warmer waters are already pushing salmon further north, interfering with their return to spawning grounds and thus survival rates. Less salmon also means less food for bears and bald eagles.

## NETWORKS OF PARKS CAN HELP

As plants and animals shift their ranges in response to changing climate, parks and other natural areas will become crucial in their battle to survive. A recent article in the scientific journal *Nature* points out:

*The modern landscape provides little flexibility for ecosystems to adjust to rapid environmental changes...species in many areas today must move through a landscape that human activity has rendered increasingly impassable.*

Large, interconnected networks of parks can help provide natural pathways for plants and animals to follow as they shift their ranges in response to climate change. It is crucial that we complete these connected networks of parks and other areas to protect species and their habitats.



Alpine meadows will be affected as ecosystems shift.



Droughts and temperature increases will wreak havoc with grasslands and wetlands.

# SOLUTIONS TO THE CLIMATE CRISIS

While we may only visit parks on weekends or on vacation, how we lead our lives everyday in our communities affects these natural areas.

As citizens, we can also urge our political leaders to take action on climate change by shifting to cleaner energy sources and a more energy efficient economy. Most importantly, governments at all levels should support the only international framework to tackle this critical global problem, the Kyoto Protocol on Climate Change.

## YOU CAN MAKE A DIFFERENCE

We can alter our lifestyles to reduce our consumption of fossil fuels that cause climate change.

- **Write Prime Minister Chretien** (postage free): House of Commons, Ottawa, K1A 0A6. Fax: (613) 941-6900, E: pm@pm.gc.ca. Urge him to ratify Kyoto. Send a copy to your Premier.
- **Support** the completion of an **interconnected network of parks** across Canada. This will help nature adapt to a changing climate.
- **Walk, cycle, take transit, or car pool** around town and to the park. If you need a vehicle, make fuel efficiency a top consideration.
- **Choose recreational activities** that do not consume fossil fuels, such as hiking, biking, or paddling.
- **Get involved** with CPAWS and the David Suzuki Foundation's Climate Action Team.

Climate Change is a global issue affecting the planet's ecosystems and biodiversity. The choices we make—even small ones—can make a world of difference for plants, animals and people.

### On the move

Shifting ecosystems, as a result of climate change, can have serious consequences, including:

- habitat fragmentation
- threats from new species and pests
- species extinction (local, provincial or national)
- habitat loss

### PARKS IN THE GREENHOUSE

Scientists have identified climate change as a significant stress on many treasured parks across Canada. This means that our experiences when we visit parks will be altered.

### Impacts of climate change on parks:

- altered forests
- shifted ecosystems
- sea-level rise
- more forest fires
- less sea and lake-ice cover
- melting permafrost
- altered seasonal water levels
- loss of wetlands
- melting glaciers
- more insects and pests

Adapted from: *Climate Change and Canada's National Park System*