

# The Global environment: Rotorua climate



## Indicator 12.3 Total annual rainfall, number of wet days, ground frost days, wind speeds

STEADY

### Purpose of indicator

Climate affects not only the comfort of everyday living but also dictates what types of plants (including food) and animals can live and survive in an area. It also affects the susceptibility of an area to flooding, drought and hurricanes. Not all of these are directly applicable to Rotorua but the district is part of the wider global environment. By monitoring simple atmospheric factors such as temperature, rainfall and wind speed, changes to the local climate can be monitored.

### Current information and trend

The long term total annual rainfall trend (Figure 12.5) suggests that there has been an approximate 200 millimetre decline in the past 42 years. This trend accords with national climate observations which suggest the pattern of rainfall change and number of wet days (Figure 12.6) over New Zealand is consistent with changes in wind patterns associated with the move to more frequent and stronger El Niño events in the late 1970s, and possibly also to climate change.



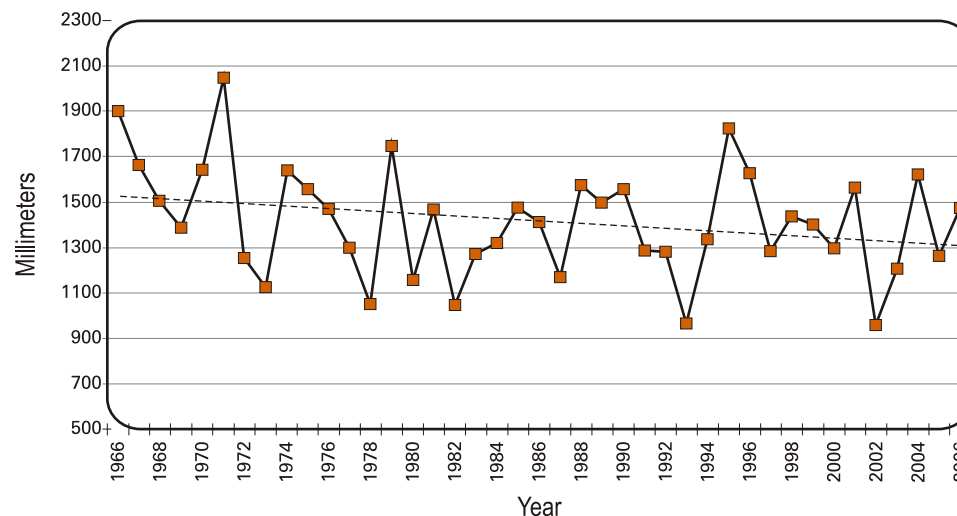
Winds speeds in Rotorua are also in line with national trends (Figure 12.7). Westerly winds over the whole country have strengthened in recent decades, again this is consistent with the change in El Niño activity. The graph shows that winds have become stronger by 1 km/hour over the past 41 years.



There is a strong correlation between minimum temperatures and number of ground frost days (Figure 12.8). Although the long term trend for minimum temperatures shows a stable though slight downwards trend, data from 1993 onwards suggests that there has been an increase in minimum temperatures and a proportional decrease in ground frost days.

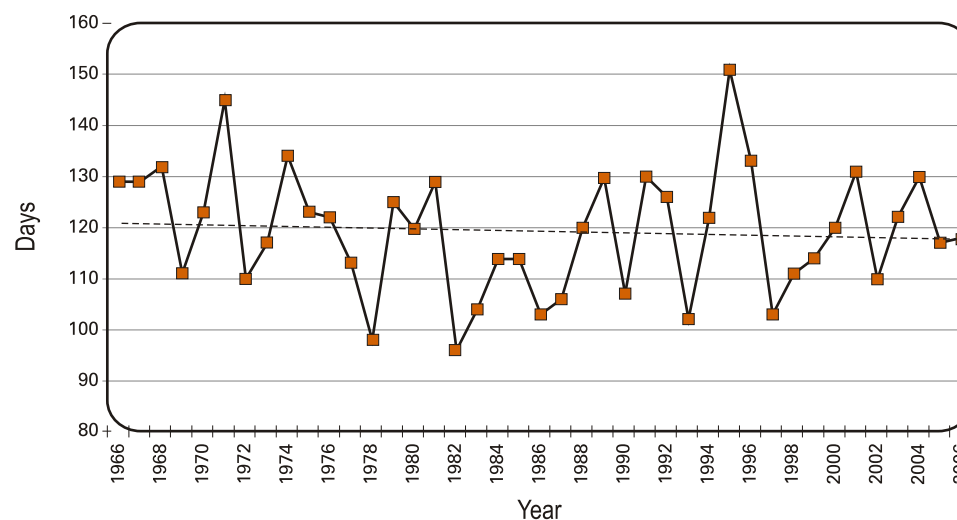


Figure 12.5 Total annual rainfall



Source: NIWA

Figure 12.6 Annual number of wet days



Source: NIWA, 2006

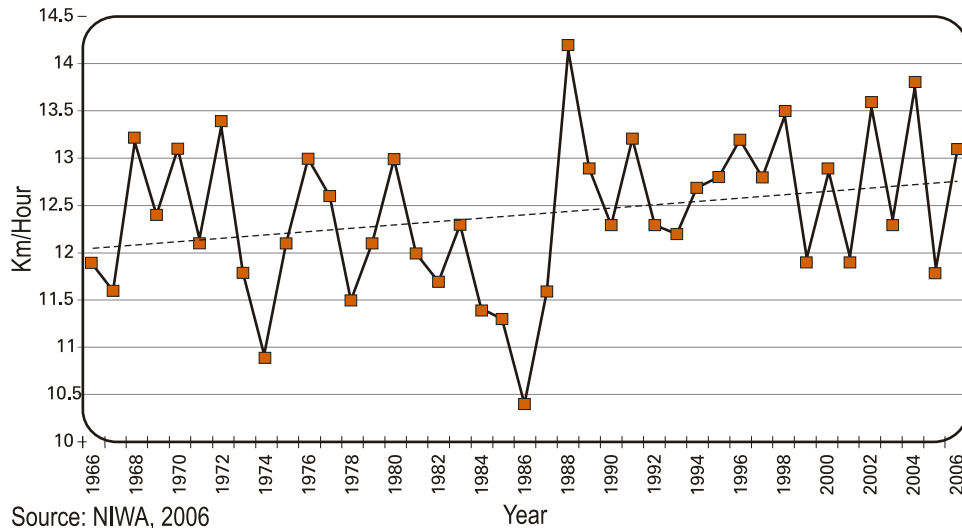
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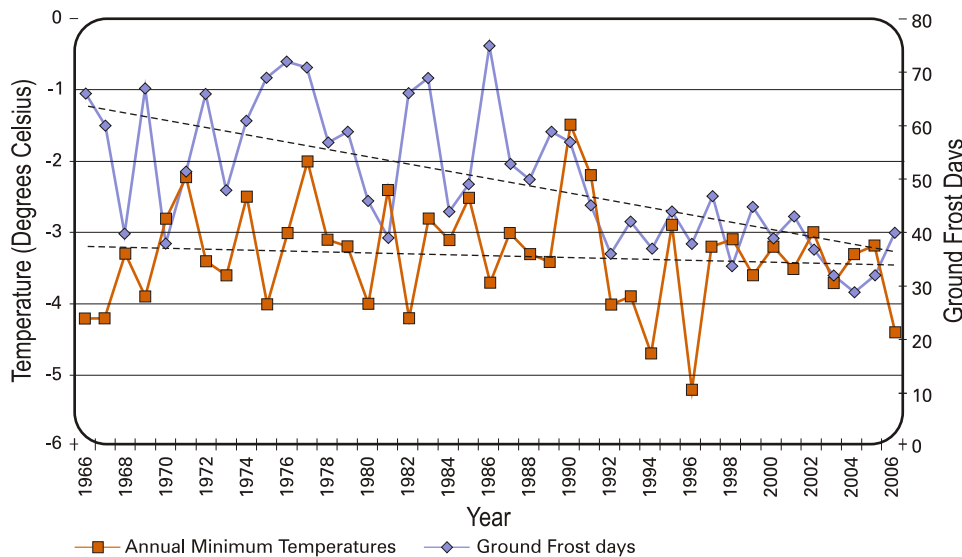
STEADY

Figure 12.7 Annual mean wind speeds



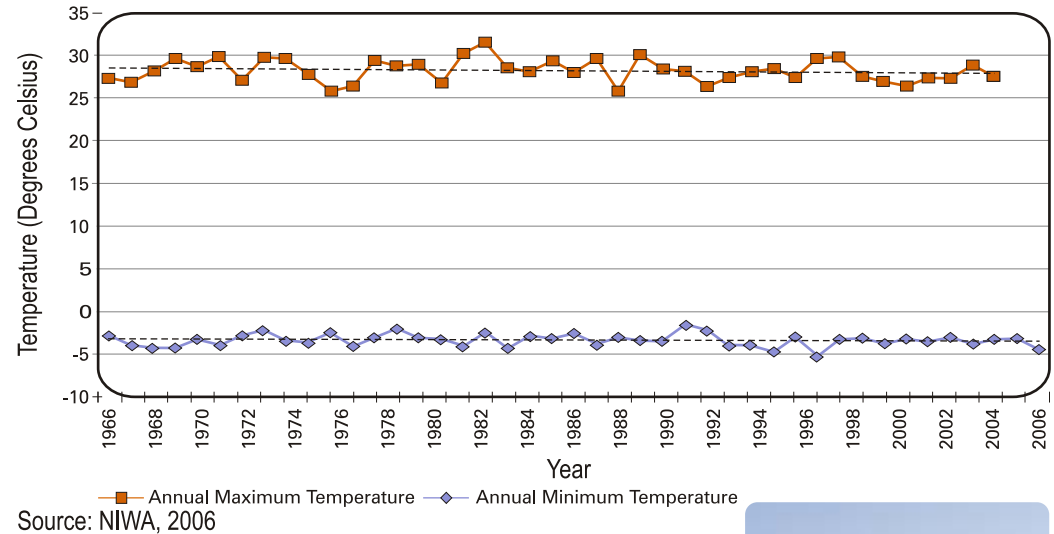
Source: NIWA, 2006

Figure 12.8 Annual minimum temperatures and ground frost days



Source: NIWA, 2006

Figure 12.9 Annual maximum and minimum temperatures



Source: NIWA, 2006

In general, Rotorua temperatures (Figure 12.9) show quite strong rises in the period before 1960, giving an overall rise of over 1C in minimum temperatures between 1940 and 2000, and about 0.6C in maximum temperatures.

### What the community said

Eighty eight percent of the community believed they were aware of global warming and the actions that could be taken to reduce its effects. Only four percent of the community said they were unaware of global warming or actions to address it.



# MAKING A DIFFERENCE WHAT YOU CAN DO TO HELP YOUR ENVIRONMENT



## ACTIONS YOU CAN TAKE



### In 15 minutes

- ✓ Find out if your energy provider is a green energy provider.
- ✓ Google 'climate change adaptation' to find out how to cope with and make the most of changes to the climate.
- ✓ Sign up for a Sustainable Living Workshop.
- ✓ Join a local action group like Climaction Rotorua.
- ✓ Use energy saving light bulbs.
- ✓ Switch off lights and appliances when they are not in use.



### In 1 hour plus

- ✓ Find out what your carbon footprint (amount of carbon emission) is. There are many online tools to help you do this. See how small you can get your household's footprint!
- ✓ Consider alternatives to fossil fuels as energy sources. Renewable resources such as solar or hydro power are best.
- ✓ Choose a fuel efficient vehicle that is the right size and suits your lifestyle. There's no need for a people mover if you usually travel alone.
- ✓ Choose energy efficient appliances that will last for a long time.

## WEBSITES FOR MORE INFORMATION AND IDEAS

Find out your carbon footprint

Landcare Research Carbon Zero Programme  
[www.carbonzero.co.nz](http://www.carbonzero.co.nz)

World Resources Institute  
[www.safeclimate.net](http://www.safeclimate.net)

Join a local action group

Environment and Conservation Organisations of Aotearoa New Zealand  
<http://www.eco.org.nz>

Sustainable Living  
[www.sustainableliving.co.nz](http://www.sustainableliving.co.nz)

Climate change science and information

The Ministry of Research, Science and Technology (MoRST)  
[www.morst.govt.nz](http://www.morst.govt.nz)

Ministry of agriculture and fisheries  
[www.maf.govt.nz](http://www.maf.govt.nz)

New Zealand's climate change solutions website.  
[www.climatechange.govt.nz/](http://www.climatechange.govt.nz/)