



## How will climate change affect nature?

A wise person has said about climate predictions that the sceptic should take the estimate of lowest impact, the scientist should hold to the middle ground, but the manager must prepare for the greatest likely impact.

Following this precautionary principle, predicted climate changes used in this fact sheet have been taken from the upper level.

This is not just the expedient path to take from a management planning point of view – the more extreme predictions for climate change are now increasingly observed to be true.

### What can we expect?

Victoria's natural systems as we know them will change. As might be expected when dealing with a range of ecosystems which together harbour well over 100,000 native species, the effects are complex, with many changes having feedback effects throughout the landscape.

Higher levels of carbon dioxide (CO<sub>2</sub>) in the atmosphere, for example, can affect plant growth, favouring some species over others, particularly where nutrients are available.

Effects are varied, but some eucalypt leaves have shown decreased protein, and higher levels of tannin. And increased CO<sub>2</sub> in the atmosphere is absorbed by the ocean, increasing ocean acidity.

### Some predicted climate changes\*

Carbon Dioxide CO<sub>2</sub> levels were around 280 parts per million in 1750 and climbed to 379ppm in 2005, with 70 per cent of that increase happening since 1970. Atmospheric CO<sub>2</sub> could reach an astonishing 970ppm by 2100.

- **Temperature:** Australia will become hotter, with an increase of up to 2.2° by 2030, and up to 6.7° by 2070.
- **Rainfall:** In general southern Australia is likely to be drier overall, with southern South Australia and most of Victoria very likely to be drier.
- **Water resources:** Stream flows in the Murray-Darling Basin have been estimated to reduce by up to 20% by 2020, and up 50% by 2050.



Under climate change coastal sea levels could be 59cm higher by the end of the century.

- **Oceans** and coast sea levels could be 59cm higher by 2100. Sea surface temperatures are predicted to continue to increase in the Southern Tasman Sea up to 0.9° by 2030.
- **Storms** are likely to increase in intensity, with both wind and rain occurring in more intense events.
- **Snow** cover is likely to decrease by up to 54% by 2020, and up to 93% by 2050.
- **Fire:** The frequency of days with very high and extreme fire ratings may increase by up to 25% by 2020, and up to 70% by 2050.

\* Climate impact predictions are drawn from: Dunlop, M. & Brown, P.R. 2008. *Implications of Climate Change for Australia's National Reserve System: A Preliminary Assessment. Report to the Department of Climate Change, February 2008.* Department of Climate Change, Canberra, Australia



**Yes!** I would like to join the VNPA to enjoy and protect Victoria's unique natural environment and wildlife.

### PERSONAL DETAILS

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Suburb/Town \_\_\_\_\_ Postcode \_\_\_\_\_  
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Email \_\_\_\_\_  I do **not** wish to receive email bulletins and news from the VNPA.

### SELECT MEMBERSHIP

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Individuals  1 year \$55  
Concession (Pensioner/Student)  1 year \$35  
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Corporate (Club/Society)  1 year \$85

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I would like to make a **regular financial contribution** in addition to my membership *All donations over \$2 are tax-deductible.*  
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