



Species caught out by climate change

Over the millennia, as the earth warmed and cooled, species and whole plant and animal communities have migrated up and down mountains, or north and south across lowlands, to a climate that suited them.

As they moved, avoiding extinction, they would slowly evolve new capabilities and defences suiting them to their new surrounds.

But with predictions of rapid warming ahead, and fragmented ecosystems across the landscape, many of our plants and animals are in real danger.

Reaching for the sky

Because Victoria's alpine plants and animals are already at the very top of our mountain ranges, they can't migrate vertically to a cooler climate (and they can't migrate south without going downslope).

Alpine areas in Victoria are mainly found roughly above 1200m, such as in the Alpine, Mount Buffalo and Baw Baw national parks.

They are generally just above or near the 'treeline' (the height at which trees no longer grow), and consist of wildflower-rich grassy plains or mixed shrubby and grassy areas, often with peaty mossbeds at the headwaters of alpine streams.

They are surrounded by Snow Gum woodlands, and there is already evidence that Snow Gums are encroaching on these areas.

Victoria's alpine areas are listed by the International Panel on Climate Change (IPCC) as among the three most climate-vulnerable ecosystem types in Australia (along with the Great Barrier Reef and the Wet Tropics).

What happens with climate change?

Alpine species must try to survive in the face of:

- A warmer, drier climate and much reduced snowfalls.
- Shorter periods of snow, which changes seasonal events such as flowering times and feeding periods.

They must also cope with increased weed invasion and competition from new native plant and animal



Victoria's alpine areas are extremely vulnerable to climate change.

species migrating up the slopes.

There are already many threatened species and plant communities in the high country, and most of them will find life very tough. The remarkable and highly specialised Mountain Pygmy-possum, for example, is facing the dual dilemmas of increased predation and reduced food sources.

Heading south

Down on the lowlands, in an ideal world, plants and animals faced with increased temperatures could simply head southwards to a place where soil types are much the same and the climate suits them.

Things have always been more complex than that, of course. Topography varies, rivers and even oceans intervene. And with whole ecosystems on the move in the past, thousands of species have had to rearrange long-standing relationships with their neighbour species.

The climate-induced migration of complex ecological communities makes the not inconsiderable journey of Moses and his exiled people look like a holiday.

Unfortunately, this time around, the situation is even more complex. Climate change is moving more rapidly, making evolutionary adaptation difficult, and many of our natural areas are now surrounded by farmland, towns and cities. Many species will be forced to tough out climate impacts where they are.