

Winter heatwaves are nice, as extreme weather events go

May 28 2014, by Sarah Perkins



A record-breaking winter heatwave - which makes pretty nice weather for a dip.
Credit: DAN HIMBRECHTS/AAPIMAGE

If you've stepped outside at lunchtime in Sydney over the past few days, you'd be forgiven for thinking that it was more like early summer than the beginning of winter.

On each of the past 23 days, the [temperature](#) has reached highs in the mid-20s, exceeding 27C on May 25. This is characteristic of [November](#), not May.

With the exception of May 3, no daily maximum at Sydney's [Observatory Hill](#) has been below 20C. So far, May's daily maximum temperatures have averaged just under 4C above normal. May 25 was an exceptional 8C warmer than normal.

These anomalously warm conditions are not confined to Sydney either – much of eastern Australia has experienced heatwave conditions during May, relative to the usual conditions.

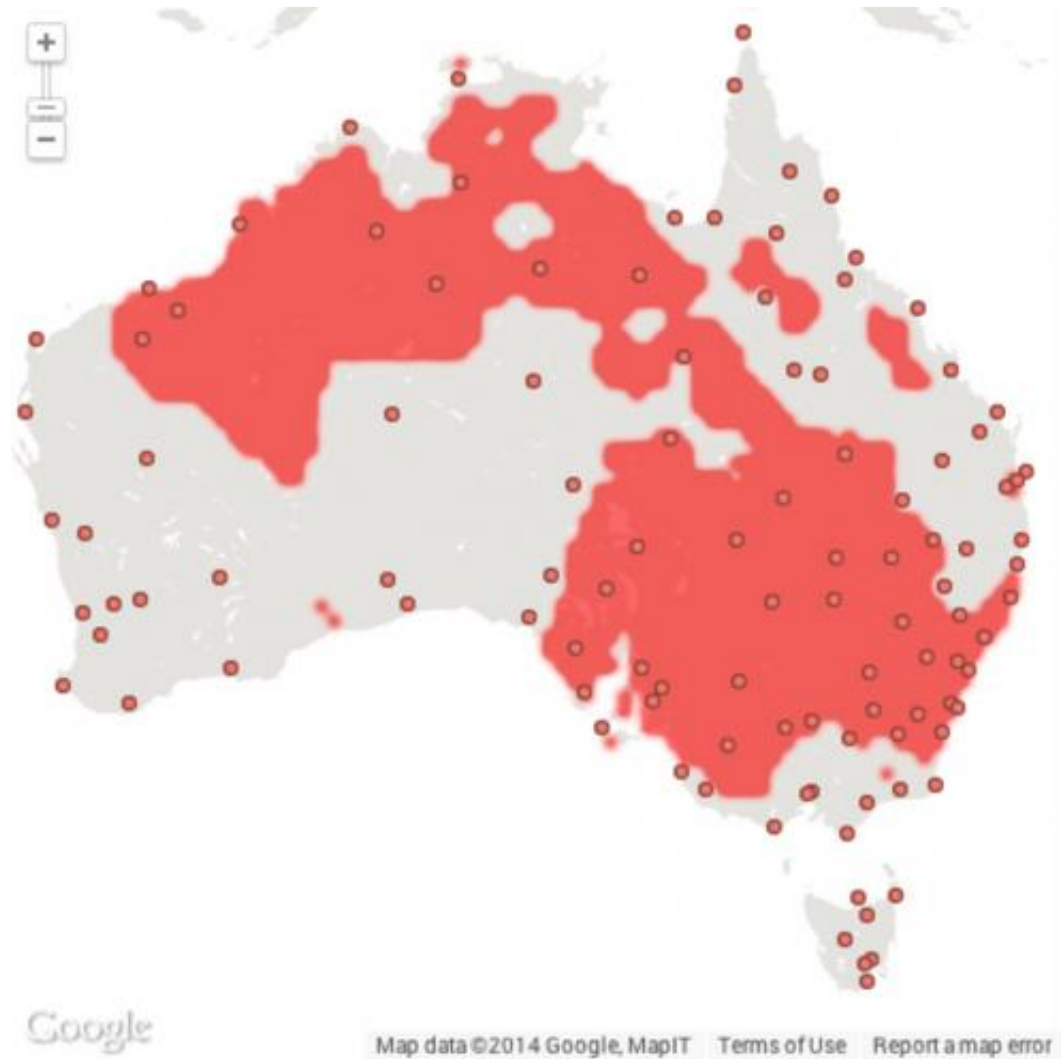
Winter heatwaves

Heatwaves, defined as sustained periods of unusually warm weather, can obviously occur during the cooler months as well as the hotter ones.

Winter heatwaves – also called warm spells – are not as widely appreciated as summer ones, partly because their impacts on humans, animals and infrastructure is minimal.

Indeed, winter warm spells can be quite enjoyable. They might mean not needing to turn your heater on at home, or not wearing a coat on your way home from work, or even spending some time soaking up the sunshine on your lunch break.

But because of their attractiveness, warm spells often fly under the radar of most people's perception of [climate change](#).



Areas of Australia experiencing heatwave conditions as of May 24, 2014. Credit: www.scorcher.org.au

Yet more frequent and longer warm spells in the cooler months is exactly what we expect to see as our planet continues to warm due to human activity.

Winter warmth on the increase

Two years ago, my colleagues and I [analysed changes to heatwaves and](#)

[warm spells around the world between 1950 and 2011](#). Both summer heatwaves and winter warm spells became longer, more frequent and more intense – but the changes were much bigger and faster for winter warm spells.

This is not happening just with warm weather. In fact, cool [extreme temperatures](#) seem to be increasing at faster rates than hot extremes. This means that hot nights are increasing in intensity and frequency at faster rates than hot days, and that warm winter days (whether they are part of a warm spell or not) are also increasing further and faster than hot summer days.

These findings are covered by the Intergovernmental Panel on Climate Change's [Special Report on Extremes](#), as well as its recent [Fifth Assessment Report](#). Global climate models predict that these trends will continue, including in [Australia](#).

[Recent research](#) has also shown that trends in extreme temperatures did not follow the rules of the warming "hiatus", and that extreme global temperatures trended upwards between 1998 and 2013, despite global mean surface temperatures apparently taking a break from warming.

Nice weather... but harmful

Some people will find it hard to see any downside to the increase in balmy winter weather. But this trend – like increasing global average temperatures, sea level rise, and ocean acidification, to name a few – represents yet more evidence that we are altering our climate.

While you might be happy that your Ugg boots can stay in the wardrobe a bit longer, warm winter extremes can have adverse impacts too – and because they happen in the background, they may not become obvious until the damage is already done.

The growing intensity and frequency of winter warm spells is helping to lengthen Australia's bushfire season, by drying out fuel. This is particularly concerning when coupled with low rainfall and high fuel loads, similar to the conditions that prompted New South Wales to experience severe bushfires as early as October last year.

Agriculture suffers too. Staple crops like wheat are [fine-tuned to an optimum climate](#), and extreme heat in the crop's growth and reproduction phase significantly reduces its yield. All wheat needs is just one day above 35C during wheat's spring flowering stage can be enough to do significant damage to grain size and quality. Bad grain can affect the quality of our bread and (even more worryingly for some) our beer.

Winter warmth also worsens droughts. Extreme temperatures and rainfall have a [complex relationship](#), however extreme temperatures, even in cooler months, can enhance evaporation since warm air can hold more moisture than cooler air.

This can reduce soil moisture, worsening droughts or even triggering new ones. Dry soils are also heavily linked to the intensity and frequency of summer heatwaves.

So while the unseasonal warmth may be pleasant, it is another link in the chain of climate change indicators. And the worst of the impacts are yet to come.

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