Cyclones, rainfalls and temperature: Does ***Australia*** have a climate crisis?

Jennifer Marohasy

In November 2007, the United Nations (UN) released the last of its much publicised fourth series of expert reports on climate change, with a comment from Secretary-General Ban Ki-Moon that the report's findings are more terrifying than the worst-case scenario in a doomsday film. It is hard to reconcile the Secretary-General's comment with the substance of the report.

But then again, when it comes to climate change, the hysteria appears to continually trump substance. In the same way that many people are thrilled by a good doomsday film, we seem to have become caught up in the drama of an imaginary climate crisis.

Type the two words 'climate crisis' into Google and the first link is to the film *An Inconvenient Truth*.The film, about how the earth is being destroyed by greenhouse gases, not only won Al Gore a Academy Award in the documentary category but also the 2007 Nobel Peace Prize. Its website explains how we can take action as individuals to reduce greenhouse gas emissions—including by running our dishwashers only when there's a full load. If only I had a dishwasher!

Then again we don't have a climate crisis—at least not in Australia. The evidence for this comes directly from Bureau of Meteorology records on cyclones, rainfall and temperature over the last 100-or-so years.

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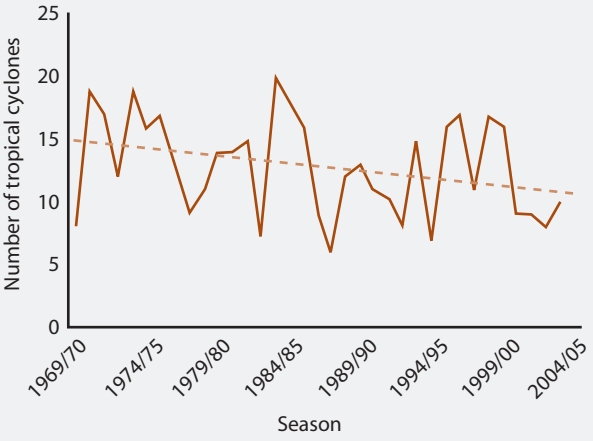
Figure 1: Number of tropical cyclones between 90°E and 160°E, 5°S and 40°S for seasons 1969/70–2003/04



Based on the work of Professor Neville Nichols. Data are not entirely comparable through the entire period, as there was complete satellite coverage only from 1977 onwards.

Cyclones

There has been little overall change in the number of cyclones in the Australian region since 1910, but there has been a shift to more intense systems—particularly category four and five cyclones. According to the Bureau of Meteorology, over the Southern Hemisphere as a whole, the number of cyclones has increased from the 1950s but there has been little change since around 1970.

Cyclones have the potential to wreak havoc. On 10 November 2007, *The Australian* published an article entitled 'Australia facing worst cyclones in years'. It began, 'Australia should brace itself for the worst tropical cyclone season since 1998/1999'. La Nina conditions in the tropical Pacific Ocean, not global warming, were given as the reason, in particular that sea surface temperatures are the coldest since 1999.

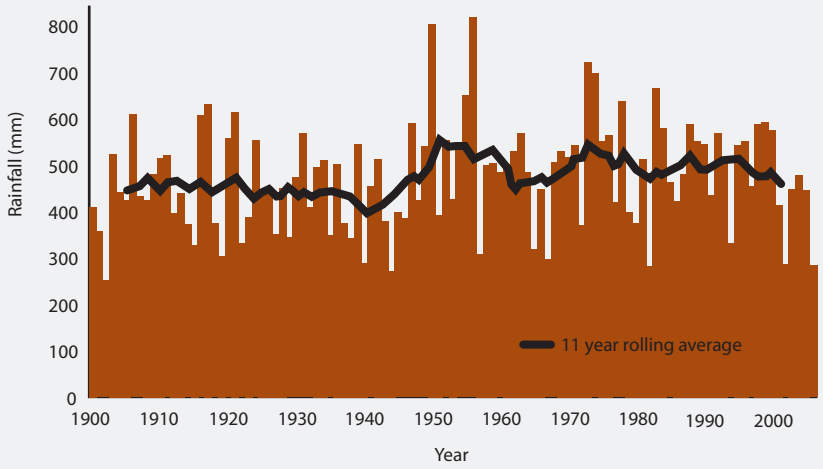
Rainfall

There was good rain in Brisbane during 1998/1999. The city is now running out of water because of a dramatic increase in population, a lack of investment in new water infrastructure and the absence of the cyclones which once brought downpours that filled the catchment dams.

Not a day goes by without some reference in the Australian media to water restrictions in our cities and the drought gripping the Murray–Darling Basin. Is this evidence of a climate crisis?

This year many regions received good autumn rain—there was even flooding in the Hunter Valley. Large areas were planted to wheat in the Murray–Darling Basin. But there was no follow-up rain, so crops failed—particularly in western NSW. It was a cruel blow to many farming families,

Figure 2: Murray Darling Basin Annual Rainfall 1900 - 2006



Source: *Australian Bureau of Meteorology*

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and so the drought continues despite the earlier prediction from the Bureau of Meteorology that La Nina conditions could bring good winter rain.

The Murray–Darling Basin Commission's latest 'Drought Update' states that rainfall (July–September) over much of the Basin has continued to be below average or very much below average, with patches of 'lowest on record' in northern NSW. Water flowing into rivers over August and September has receded towards the record low levels of 2006 and system storages are lower than this time last year.

Regrowth from the 2003 bushfires, more plantations of blue gums and almonds, combined with more farm dams and more water recycling has further reduced the amount of water running into rivers and streams in the Murray–Darling Basin. So there is a severe water shortage, although it is partly demand-driven, and it may get much worse if it doesn't rain soon. But the long-term rainfall record for the basin shows no sudden downturn. Rather, we are going through a very dry patch.

Temperatures

There has been a general warming trend, globally and in Australia, over the last 100 years. At the beginning of this year, the Australian Bureau of Meteorology announced that, last year, 2006, was the eleventh warmest on record since comparable temperature observations become available in 1910, with an annual mean temperature 0.47°C above the standard 1961–1990 average.

The Bureau also commented that despite record warm daytime temperatures in the drought-affected southeast, last year was cooler than the previous year (2005) when averaged across the whole country. This was attributed to a very active tropical wet season resulting in cooler temperatures through the north, and clear skies associated with the drought in the south—resulting in cold overnight temperatures from April to July. The annual mean maximum temperature was 0.60°C above average (ninth highest), while the mean minimum temperature was 0.34°C above average (seventeenth highest). Temperature anomalies varied throughout the year, but spring 2006 was particularly warm (+1.42°C), being Australia's warmest spring season on record.

Given that climate always changes—the earth is generally either warming out of an ice age or cooling into one—the warming over the last 100 years is nothing out of the ordinary.

Conclusion

One should never take the climate for granted. Next year, the drought may continue in the Murray–Darling Basin or it may start raining at Christmas time with flooding in August 2008 as bad as that experienced in 1956. I use the word 'may' because I don't know what the future holds, but given the available data, I can confidently conclude that we are not now experiencing a climate crisis.

The United Nations first started publishing climate change reports in 1990. More than two decades later, these reports are still equivocal about the extent and the reasons for what has become known as 'global warming'. But the hype surrounding the release of each report has intensified, with the UN Chief describing the most recent report as 'terrifying'. This report will be the focus of international discussion in Bali in December with undoubtedly more dramatic media headlines. There will be very public politicking as those who believe in the doomsday scenarios insist that dramatic cuts are made to greenhouse gas emissions, particularly in countries such as Australia. And it is likely that, as perception continues to define the political reality, there will be more serious demands made on us as individuals—not just that we fill our dishwasher completely before turning it on.

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