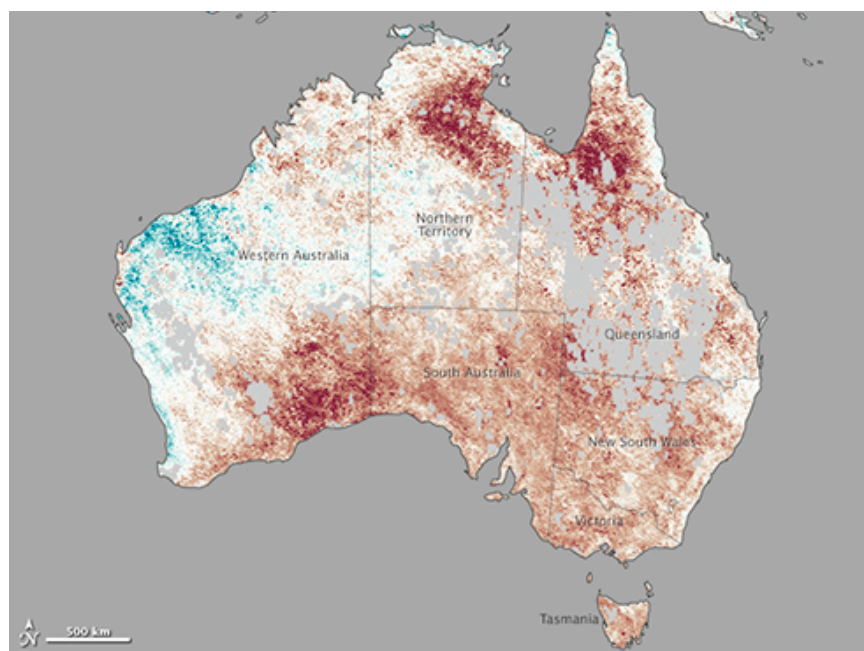


El Niño absent, but 2013 one of the 10 hottest years on record

The year 2013 was among the top 10 warmest years for Planet Earth since modern records began in 1850, according to the World Meteorological Organization (WMO). This was despite the absence of a warming El Niño event in the Pacific Ocean.



Credit: NASA

Thirteen of the 14 warmest years on record have all occurred in the 21st century. The warmest years on record are 2010 and 2005, with global temperatures about 0.55 °C above the long term average, followed by 1998, which also had an exceptionally strong El Niño event.

Warming El Niño and cooling La Niña events (together known as El Niño/Southern Oscillation or ENSO) are major drivers of the natural variability in our climate.

Neither condition was present during 2013, which was warmer than 2011 or 2012, when La Niña had a cooling influence. 2013 was among the four warmest ENSO-neutral (neither El Niño nor La Niña) years on record.

2013 tied with 2007 as the sixth warmest year, with a global land and ocean surface temperature that was 0.50°C above the 1961–1990 average and 0.03°C higher than the most recent 2001–2010 decadal average.

‘The global temperature for the year 2013 is consistent with the long term warming trend,’ said WMO Secretary-General Michel Jarraud.

‘The rate of warming is not uniform but the underlying trend is undeniable. Given the record amounts of greenhouse gases in our atmosphere, global temperatures will continue to rise for generations to come.

‘Our action – or inaction – to curb emissions of carbon dioxide and other heat-trapping gases will shape the state of our planet for our children, grandchildren and great-grandchildren.’

Surface temperature is one of the most familiar and consistently measured weather and climate variables, and has the most direct connection to long-term climate change. But it is just part of a much wider picture. More than 90 per cent of the excess heat being caused by human activities is being absorbed by the ocean.

WMO released the temperature data in advance of its full Statement on the Status of the Climate in 2013, which will be published in March. This will give more extensive details of regional temperatures, precipitation, floods, droughts, tropical cyclones, ice cover and sea-level.

WMO is currently compiling information from its 191 Members (the Bureau of Meteorology is one of them) about national trends and extreme events in 2013.

In contrast with 2012 – when the United States, in particular, observed record high annual temperatures – the warmth in 2013 was most extreme in Australia, which had its hottest year on record.

The WMO global temperature analysis is largely based on three independent complementary datasets maintained by the Hadley Centre of the UK Met Office and the Climatic Research Unit, University of East Anglia, United Kingdom (combined); the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Centre; and the Goddard Institute of Space Studies (GISS) operated by the National Aeronautics and Space Administration (NASA).

Each of these datasets use slightly different methods of calculation and so each gave 2013 a different temperature ranking, but showed consistency on the inter-annual changes and the longer warming trends globally. WMO consolidates these datasets to provide single, consolidated temperature figures. WMO also uses reanalysis-based data from the European Centre for Medium-Range Weather Forecasts (ECMWF), which showed annual global land and ocean temperature to be the fourth highest on record.

Across the world’s land surfaces only, the 2013 global temperature was about 0.85°C above the 1961-1990 average and about 0.06°C above the 2001-2010 average. This is the fourth warmest on record, partly due to a very warm November–December period.

With ENSO-neutral conditions prevailing, an exceptional warmth was observed in the Great Australian Bight and adjacent waters, parts of the north east and south central Pacific Ocean, and much of the Arctic Ocean and the global ocean surface temperature for 2013 was the highest since 2010.

Source: WMO

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