

STORM TRENDS IN AUSTRALIA AND NEW ZEALAND? NO EVIDENCE THAT CO₂ INCREASES EXTREME WEATHER

by Joanne Nova



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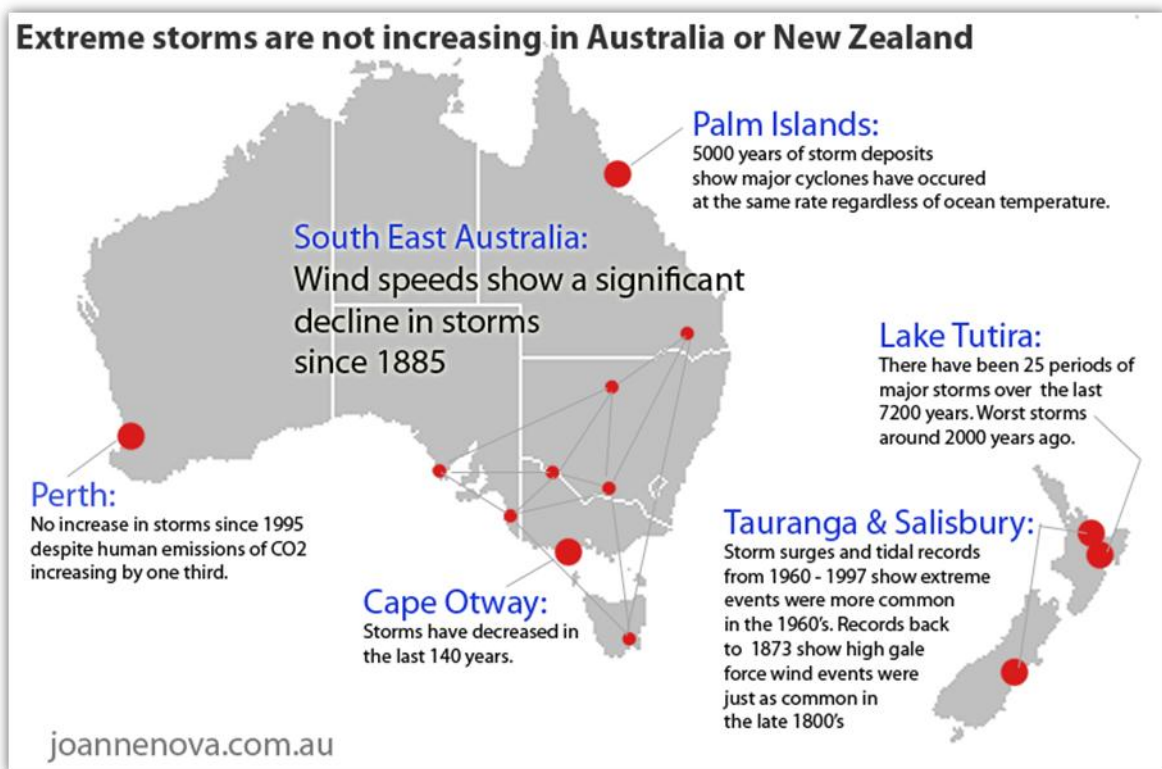
NO EVIDENCE THAT CO₂ INCREASES EXTREME WEATHER

by Joanne Nova | July 25, 2012

Get ready — for all the fears of extreme weather coming our way — studies of Queensland, Victoria, the whole of SE Australia, New Zealand, and Perth show that either nothing is changing (there have always been bad storms) or possibly, the weather is better now than it used to be. Where is the evidence to support the claims by alarmists that increasing CO₂ will make “extreme weather” more common?

It's less windy now across South East Australia than it was in the 1920's. It's less stormy on the southern coast of Victoria, and records that go back 7000 years in New Zealand and 5000 years in Queensland show repeated examples of monster storms that — should they hit today, would be described as being “likely” due to coal fired power stations and excessive use of SUV's.

The Science and Public Policy Institute published [Historical storm trends in Australia and New Zealand](#) in June. This post builds on that publication.



IT'S LESS WINDY ACROSS SOUTH EAST AUSTRALIA

Alexander et al 2011 looked at locations from Port Lincoln (SA) to Goondiwindi (QLD), to Hobart (Tas) which pretty much covers everything anyone could call South East Australia. They used wind speeds from as far back as records could go (1890 onwards) and the results

showed the wind speeds have declined across the whole region. Furthermore it doesn't matter what season you study. The trends are the same.

For those who are old enough to say so, “yes” it really was stormier and windier back in the 1920's in Australia.

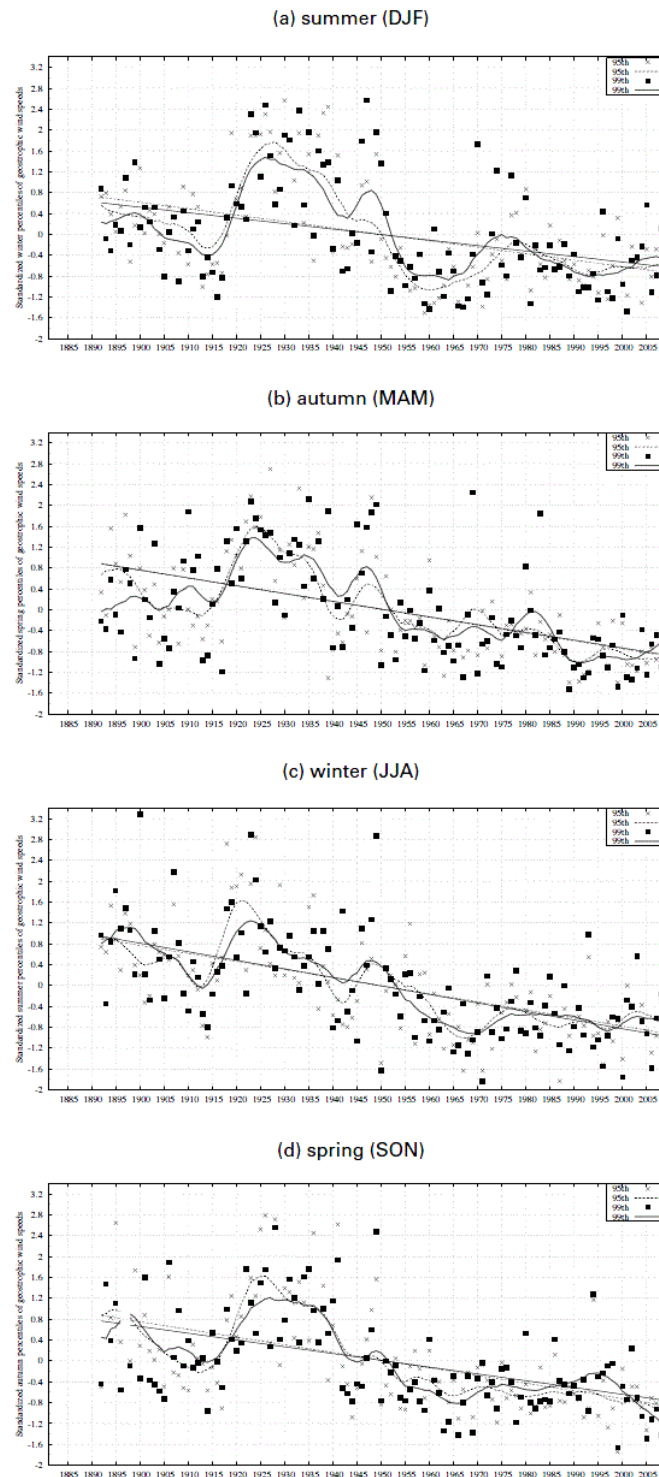


Fig. 3 Southeast Australian region averages of seasonal P95 and P99 storm indices, along with Gaussian filtered curves and linear trends for the indicated seasons over the period of 1885–2008. (Alexander et al 2011)

BUT WHAT ABOUT THE LONG LONG TREND? SAY 5000 YEARS?

Hayne and Chappell (2001) looked at deposits left from storm surges on Curacoa Island (one of the Palm Islands of far north Queensland). They found that large cyclones have been hitting the coast at a statistically constant rate for 5000 years. This includes the earliest times when the sea surface temperature appear to have been **about 1°C** warmer (Gagan et al 1998). At Palm Island, sea levels were apparently 70cm higher back in that warm Holocene era (Chappell et al 1983). Somehow the Great Barrier Reef survived.

Haynes writes: **“This suggests that cyclone frequency may not have been affected by sea surface temperatures in the region.”**

M. Hayne, J. Chappell / Palaeogeography, Palaeoclimatology, Palaeoecology 168 (2001) 207–219

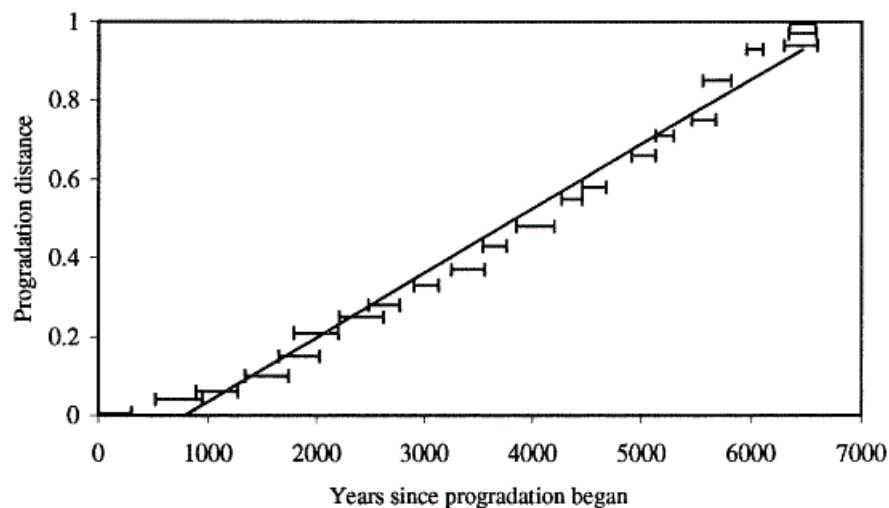


Fig 6: Progradation plot: normalized distances of each dated SD (Storm Deposit) from the oldest ridge crest versus the age difference between each SD and the oldest ridge. Graph shows average normalized (dimensionless) distance for H1 and H2 combined; error bars indicate 95% confidence intervals for calibrated group-mean radiocarbon ages for each SD (from Table 1).

Nott and Hayne studied a 5000 year history of super-cyclones along a 1500 km stretch of North East Australia and concluded that the big nasty ones hit roughly every 200-300 years in all parts of the coastline from 13° – 24°S.

STORMS IN NEW ZEALAND? NOT GETTING WORSE EITHER IN THE LAST 130 YEARS

Even before 1905 when the **first car traveled** all the way from Wellington to Auckland, bad storms were occurring in New Zealand at about the same rate as they do today (De Lange and Gibb 2000). New Zealand didn't get its **first major coal power station** until as late as 1958 either. And after coal fired power came on line the New Zealand, the “extremes” of climate apparently kept doing what they had done before.

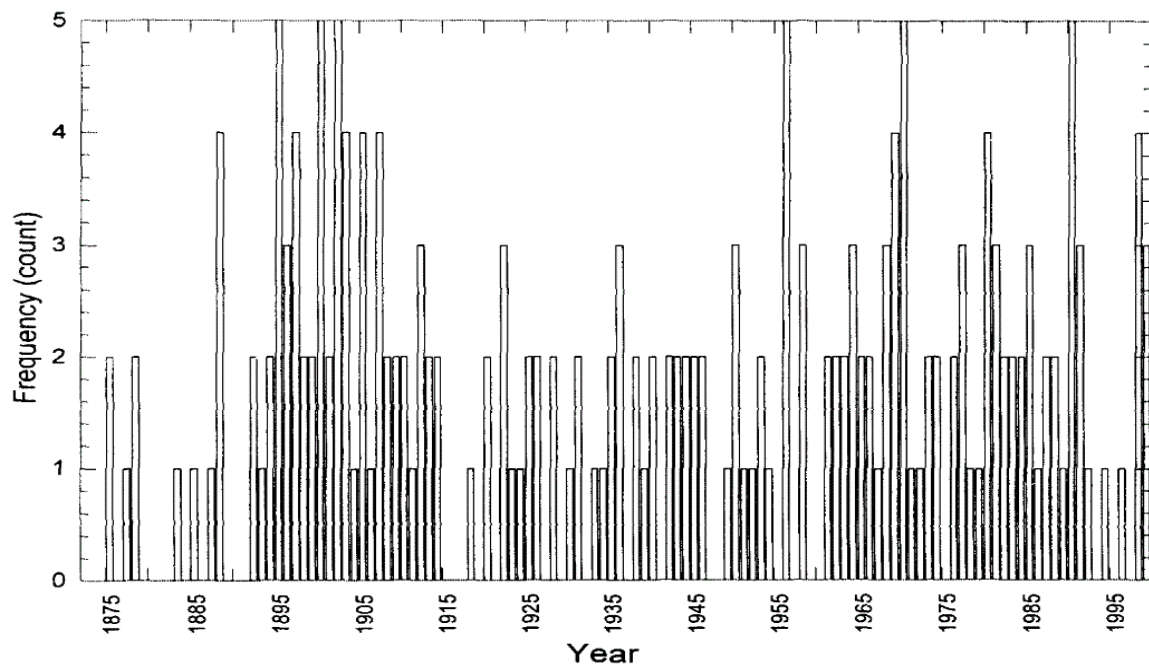


Fig. 9 Annual frequency of wind storms equal to or exceeding Beaufort Scale Force 8 (Gale) in the vicinity of Tauranga, New Zealand, over the period 1873–1997. The data are taken from the storm databases of Hay (1991) and Gibb (1997).

Likewise the dreaded storm surges and tidal rises in New Zealand remained stubbornly flat or are even falling in trend (De Lange and Gibb 2000)

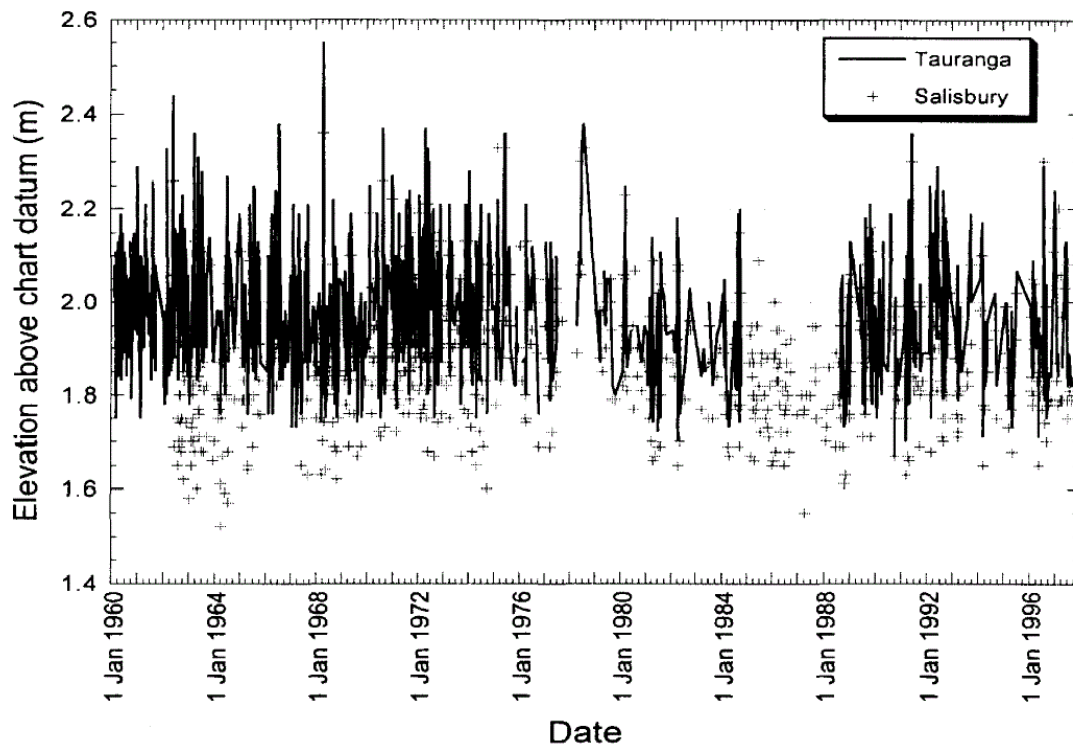


Fig. 5 Maximum water level, including tides, relative to chart datum (-0.963 m MD-53) during storm surges at Tauranga and Salisbury, New Zealand, tide gauges between 1960 and 1997.

A 7000 YEAR RECORD OF STORMS IN NZ

A study of lake sediments at Lake Tutira NE New Zealand show there have been many stormy periods in New Zealand on and off for 7000 years. The worst was about 2000 years ago. These stormy periods can appear abruptly, though during the warmest periods of the Holocene the years between storms is often larger.

From the abstract of Page et al 2010:

A storm event chronology, supported by twelve tephra and three ^{14}C ages, indicates that storm magnitude and frequency has varied over the last 7200 yr. Twenty-five periods with an increased frequency of large storms occur, typically of decadal to centennial duration. Periods of major storm activity occur at about 500–700, 1100–1250, 1850–2100, 2850–3200, 3600–4000, 4300–4500, 4700–4900, 5700–5900, and 6850–6900 cal. yr BP. Several other local and regional climate proxies record conditions that are consistent with the timing and periodicity of major storms in the Tutira record. A period centred on 2000 yr ago has the highest incidence of storms, with a recurrence of 1 storm/2.9 yr.

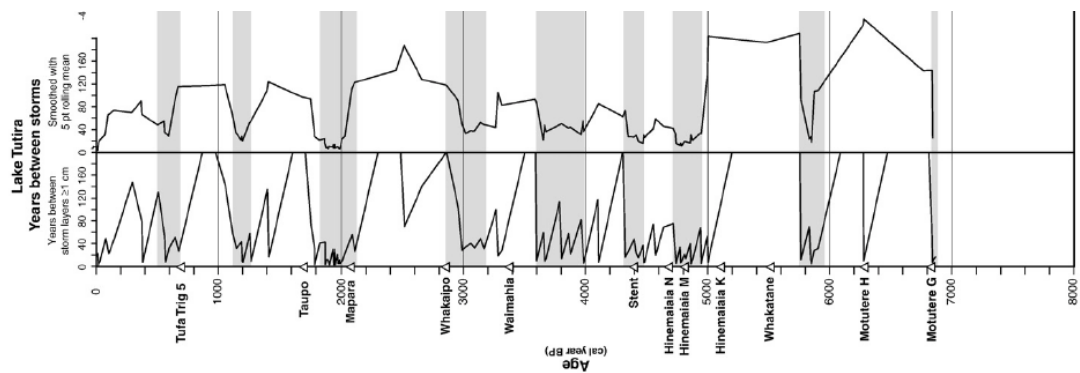
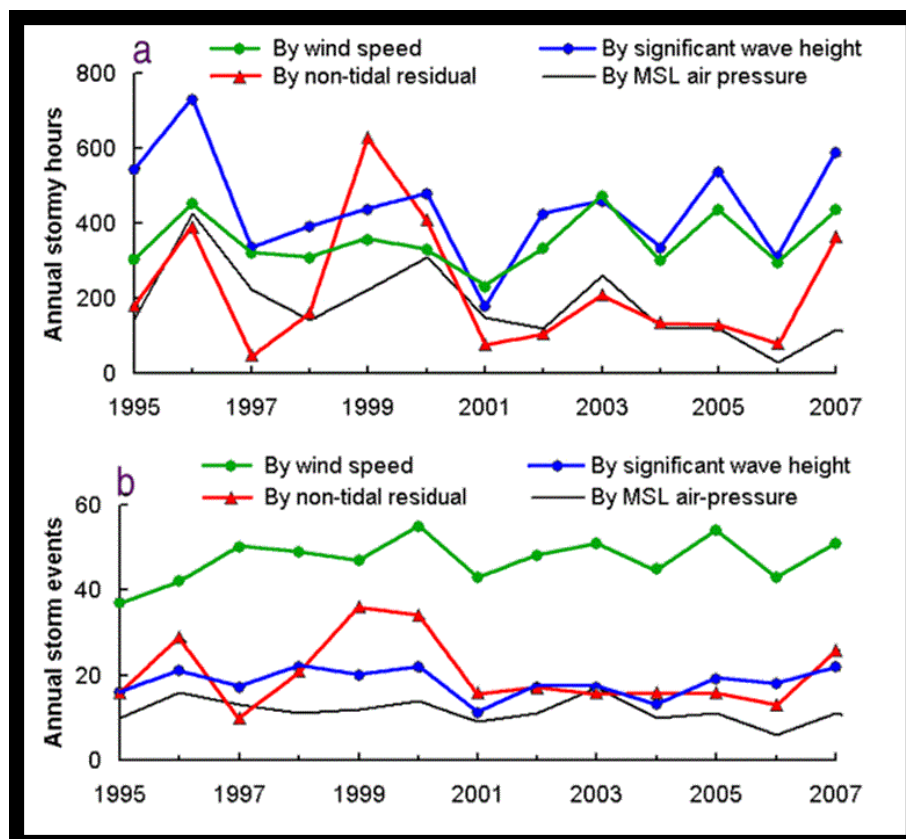


Fig. 6. Regional palaeoclimate proxy records for the mid to late Holocene. Lake Tutira storm frequency record as represented by sediment layers ≥ 1 cm. δ deuterium record (‰) from EPICA Dome C ice core, Antarctica (Jouzel, 2004). $\delta^{18}\text{O}$ record (‰) (100 year running mean) from Plateau Remote ice core, Antarctica (Mosley-Thompson, 1996). Organic carbon (‰) from lake sediment core, South Georgia (Rosqvist and Schubert, 2003). Event time series (100 year non-overlapping windows) for ENSO events from Laguna Pallacocha sediments, Ecuador (Moy et al., 2002). Tephra (Δ) are marked on X axis. Major stormy periods are marked by grey shading.

Fig. 6. Regional palaeoclimate proxy records for the mid to late Holocene. Lake Tutira storm frequency record as represented by sediment layers ≥ 1 cm. Tephra (Δ) are marked on X axis. Major stormy periods are marked by grey shading. [The original graph also includes EPICA Dome Plateau, Remote South Georgia and Kaguna data mapped above the storm frequency.]

THE WEST COAST OF AUSTRALIA

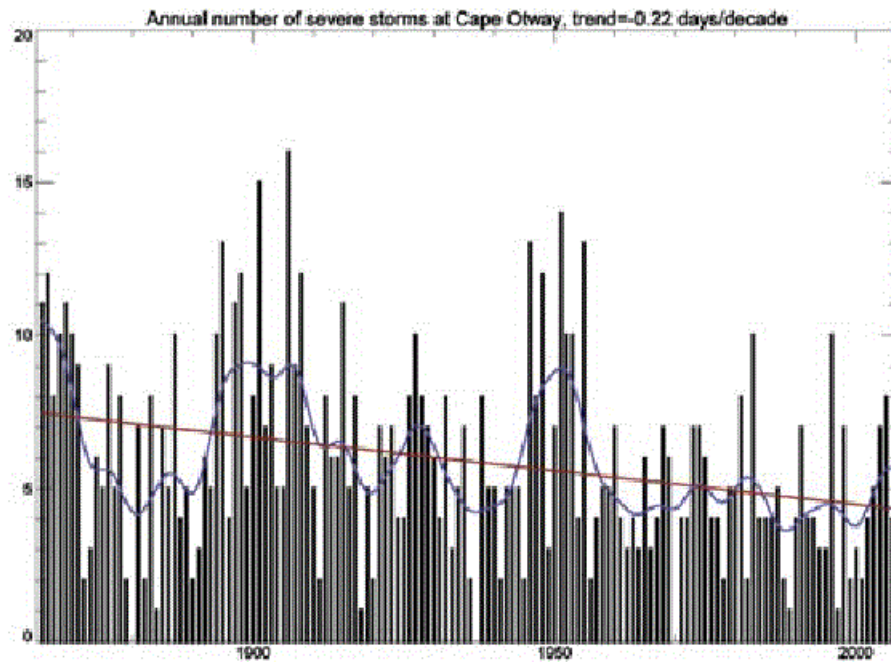
Since 1995 there has been no increase in storms around Perth. This seems like an terribly short record, but bear in mind that a third of all our human emissions have occurred since then. So all that CO₂ has arrived and there is nothing to show for it.



VICTORIA IS LESS STORMY THAN IT USED TO BE

In Victoria, the number of severe storms affecting the south-west Victorian coast has decreased by around 40% over 1865–2006.

Fig. 4 The number of severe storms per year at Cape Otway, 1865-2006 (vertical bars), the blue line is a 21-term binomial filter representing decadal fluctuations in the data and the red line is the linear fit to the data. The trend is significant at the 5 per cent level.



... Li et al 2011

h/t CO₂Science “storms”

NIPCC: “Storms”

SPPI: [Historical Storm Trends in Australia and New Zealand](#)

Strangely I can’t find any review or compilation of this Australasian data by the Australian government. Despite all the paid officials and scientists, no one appears to have simply collated the relevant studies. If you think these collections of papers and graphs are useful, especially in the current political climate, all contributions are gratefully received. Even a few dollars counts. 😊 — Jo

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Thanks to Bob at SPPI for the inspiration and info.

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Source: <http://joannenova.com.au/2012/07/storm-trends-in-australia-and-new-zealand-no-evidence-that-co2-increases-extreme-weather/>.

Cover photo of trees in the Australian rainforests provided by Microsoft.



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