

Climate Change: Geoscientists Understand Longer-term Perspectives

Soon after the floods, the inevitable accusations appeared. "Bob Brown blames coal mining for Queensland Floods (the worst in 40 years)", (*AAP* on 16 January and *The Australian* on 17 January), and "wants the Federal Government to impose the original version of the 40% Resources Super Profits Tax (RSPT) to pay for the cleanup."

Gerard Henderson's *Sydney Morning Herald* (*SMH*) rebuff, 'Eco Doomsayers: blind to history, unreliable tipsters', commented that similar and greater floods have occurred in Brisbane in the past: notably 1841 and 1893 (over 8 m), and in 1931 and 1974 ('only' 5.4 m – a bit less than the recent floods).

Australia has always been subject to natural cycles of droughts and floods, but this is ignored by climate change sensationalism, which is incredibly myopic in its time frame. This history denial is obvious from the repeated and usually incorrect use of 'unprecedented', which now has about as much meaning as 'awesome'.

Elizabeth Farrelly's, *SMH*, ludicrous response on 20 January that this was not "a natural disaster", but "Gaea's lesson. Children learn your cataclysm". She asserts if the Queensland Government shores up the coal industry, we will "need to habituate to repetitive catastrophe as though it were simply natural." This again exhibits the incredible, myopic and passionate belief in the Anthropogenic Global Warming (AGW) religion.

And Then Cyclone Yasi Struck

This led to spurious claims, yet again, that "as the grip of climate change tightens the frequency and intensity of (cyclonic) disturbances will increase (James Woodford's comment on coral reefs in the *SMH* on 5-6 February). The reality is that Global Accumulated Cyclone Energy is only just increasing again after the recent 30-year record low.

The strength of Yasi was due to the conjunction of the monsoon and La Nina – the second-most intense on record – both are natural cyclic meteorological events. La Nina is characterised by warm waters off the east coast of Australia, and has been responsible for the succession of strong rain events from April 2010 to February 2011.

Conversely, El Nino events are characterised by cold water on the eastern Australian coast which leads to less evaporation and drought (eg. see 'Wild Weather Explained' poster by the Bureau of Meteorology in the *Sun Herald* on 19 February). This causes less cloud, hotter weather, and paradoxically, despite cold coastal waters, coral bleaching.

Due to several years of extreme blizzard events in Europe and the USA 'global warming' became embarrassing and morphed into 'climate change'. Just like Creationism lost credibility and became Intelligent Design (no more credible, and of course not intelligent). Warming is likely to cause heavy rain events, and can cause snowfalls on mountains. But warming can't cause widespread blizzards away from mountains – they need massive influxes of frigid polar air.

Tropical Cyclone genesis relies on warm surface waters and strong temperature contrast – high thermal lapse rates with altitude. This causes vigorous updrafts, which are sculpted by Coriolis forces into cyclones. The hotter the climate, the less contrast and less energy to drive tropical cyclones.

PESA News Resources Issue No. 109 contains two articles on climate change, Gareth Cooper's 'Climate Change: Prosecuting The Case To The Right Jury' and Dr Cedric Griffiths' 'Geological Community Arm-waving On Climate Change'.

I'll address Cooper's article first. 'Prosecuting The Case To The Right Jury'. Does this mean if you want a conviction you have to get the right jury? Also, his fifth paragraph suggests that there should be no outlet for publication of views contrary to "the climate change message" which he thinks "most Australians understand, if not accept" (who says?). Scientific method demands debate and alternative hypotheses. To do otherwise is to accept dogma.

Hot Dry Rock's (HDR's) high precision borehole temperatures indicate 1.1°C temperature rise since ~1750 AD – near the end of the 'minor' but brutal 'Little Ice Age'. Gareth's Figure 2 shows the HDR temperatures start near the lowest part of the proxy temperatures band. Proxy data, which show a 0.9°C +/- 0.2°C rise, are very similar to that of HDR. This ~1°C is a very modest temperature increase, not unexpected after the 'Little Ice Age', but is made to appear truly alarming by addition of the IPCC's projected rises.

This is no "smoking gun", and is not an "answer beneath our feet" – it purely shows that the HDR borehole data confirm the recent temperature rise since we emerged from the 'Little Ice Age'. No one disputes this. The issue is the cause! Natural variation, or anthropogenic CO₂?

In the face of so much clamour and acceptance of anthropogenic global warming, why do so many intelligent scientists, especially geoscientists, disagree with the concept that atmospheric CO₂ increases have caused the ~0.9°C average temperature rise since ~1850AD? I could also ask, "Why did most doctors believe stomach ulcers were caused by excess acidity, and disbelieved WA's Nobel Prize winning Dr Barry Marshall who proved it was *Helicobacter pylori* – a bacteria?" (Much to the dismay of producers of hugely expensive but totally ineffective medications). Because it is hard to go against the conventional wisdom of the day.

I am convinced this is because geoscientists understand longer-term perspectives, and those of us who have researched and thought carefully about the issue, can see so many other potential causes. Most tellingly, geoscientists are aware that atmospheric CO₂ levels have been very much higher in the geological past without any coal burning. Despite these much higher CO₂ levels, planet Earth did not hit "a tipping point" with resultant run-a-way global warming.

Despite very high atmospheric CO₂ many times in the past than today, the oceans did not become acidic and dissolve shells, corals, algae and stromatoporoids, which instead formed major limestone deposits including reefs. The first carbonate reefs formed in the Vendian and Cambrian – Stromatolite-Thrombolite Algal Reefs.

1. Cambrian: CO₂ was 5000–7000 ppm – 12–18 greater than today;
2. Ordovician: CO₂ was 4500–4000 ppm – 12–10 greater;
3. Silurian: CO₂ was 4500–3000 ppm – 12–8 greater than today when the first coral reefs and extensive associated carbonate deposits;

letters to editor

4. Devonian: CO₂ declined rapidly from 4500–1500 ppm – but was still 12–4 greater than today's. But major stromatoporoid and coral reefs were formed – notably those in the Kimberley–Windjana Gorge etc but also in Canada and elsewhere around the world.

During the Pleistocene Ice Ages, CO₂ dropped to ~200 ppm due to its higher solubility in the frigid oceans. The 260–390 ppm CO₂ levels of the last 10,000 years are among the lowest ever in the last 550 million years. Similar low levels only occurred during the Carboniferous and Permian as CO₂ was absorbed by major coal deposits.

The Interglacial Warm Period since 10,000 years ago caused a much better and more productive world, during which human population grew from near-extinction to ~300 million at 0 AD, then to current 6.8 billion. This was only possible because of improved agriculture, especially mechanisation of food production using liquid hydrocarbons. During this period Greenland Ice Cores show that temperatures were mostly 1.0–2.5°C warmer than today

except for the Dark Ages and Little Ice Ages which were ~0.5 colder. This compares with the end of the last real ice ages – the Wisconsin and the Younger Dryas – which were 18°C colder!

Regarding Griffiths' emotive article, I cannot add too much after Phillip Playford's rational response in (*PESA News Resources* Issue No. 110). The AGW debate has long been mired in *Ad Hominem* attacks (as against 'CPP' – Carter, Plimer and Playford) and, slurs by association (eg. a lackey of the oil/mineral industry). However, Griffiths took it to a new level – attacking and dismissing the whole geological profession (except, I presume, those who agree with him about AGW). Geology is "Not a Science" (c.f. climate scientists aka computer modellers – G.i.G.o.). Geologists are "immature"; "18th Century stamp collectors"; "arm-wavers"; "have a minimal role in the IPCC" (see my next paragraph on the IPCC); and finally as "smacking of faith more than science" (just like the AGW believers?).

The IPCC was set up to produce an inventory of climate change and investigate man-caused

global warming, NOT natural causes. The IPCC charter is inherently biased, and focused on global warming caused by anthropogenic CO₂ and other greenhouse gases. In the IPCC assessment reports they add brief sections to discount many other possible contributory causes – Solar Cycles, Milankovitch Cycles, variation in CO₂ cycling by oceanic overturn with ice ages, Meteorological Cycles not yet fully understood – Pacific Multi-decadal Oscillation, El Nino/La Nina, Indian Ocean Dipole. 'Consensus Science' decisions made by the specialist working groups are passed on for synthesis into the summary for policy makers, where further filtering and bias occurs. As dissenting voices are ignored in this process, this led to progressive resignations, and the composition of the working groups has become more and more pro-AGW. Accordingly, the confidence level that burning fossil fuels has caused climate change has increased. The sensationalist press has done the rest.

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