THE CARBON STORY – THE FACTS

Dr John S Potter*

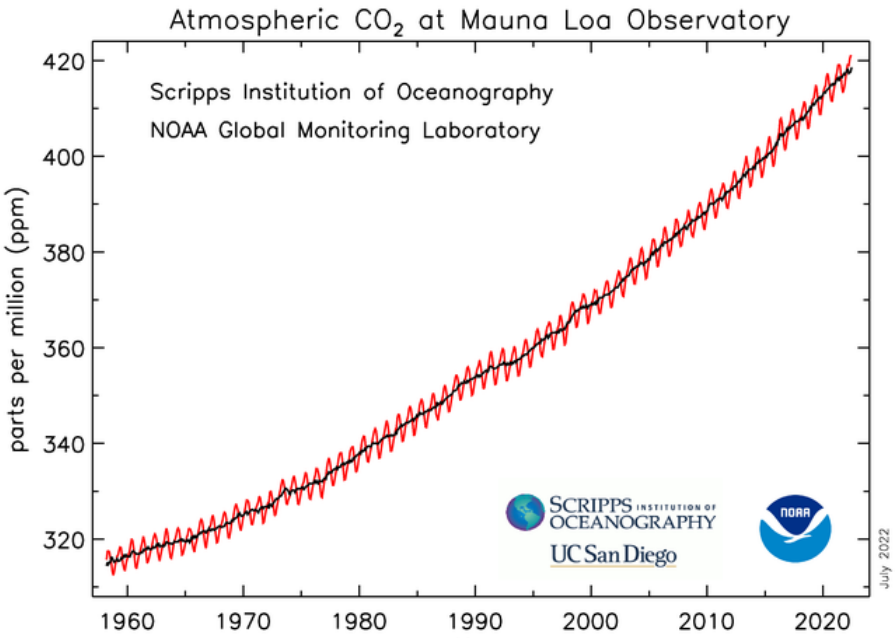
Last week I met an elderly woman. By way of opening a conversation I said: “How are you today?” She said: “I am very worried about sea levels rising.” I said: “I have good news for you, sea levels are not rising.” “How will I know,” she said. “Go down to the sea and take a look,” I replied. “Oh,” she said, “I never believe what I see, only what the experts tell me.”

Three weeks ago, Sydney was facing electricity blackouts. A woman from Manly posted a comment on Facebook: “I am not happy about blackouts but if this is what we have to do to get to the place where we have no bushfires, no earthquakes and no floods then it is going to be worth it.”

Sadly, this is no different from the things our politicians, the media and so-called scientists are telling us. They have one thing in common – **they ignore the facts**. The Climate Change dogma is the greatest delusion operating in human society since Aristotle argued that an arrow went forward because air displaced at the front went around to the back and pushed it forward; and that a heavy object would hit the ground before a lighter object when they were released at the same time at the same height. Thankfully, Newton disproved the first bit of nonsense; Galileo the second.

THE FACTS

What is happening to carbon dioxide levels in the atmosphere?



The figure above is the Keeling Curve (Anon 2022), named after Dr Charles Keeling who began recording atmospheric carbon dioxide levels in 1956 at the Mauna Loa Observatory located on the Island of Hawaii, **in the middle of the Pacific Ocean**, Latitude 19ºN.

This Curve shows the level of CO_2 in the atmosphere has been steadily rising from 1956 to the present time at the rale of 1**.75 parts per million per annum**. [The blackline is the daily average; the red squiggles are daily variation due to the different uptake by plants at night compared to day.]

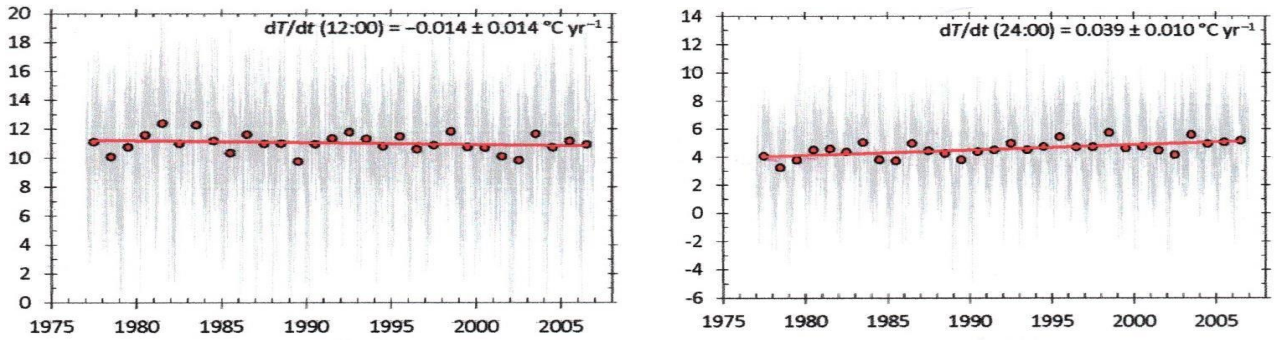
Italian scientists (Ciattaglia et al, 2010) measured CO_2 levels on King George Island in the South Shetland Islands from 1994 to 2009. Their records show a rise of 357ppm to 385ppm, i.e. 28 ppm in 16 years - **1.75 ppm/year**. These data collected at Latitude 62ºS appear to agree with the Keeling Curve for the same years. Thus, we have information from Hawaii near the Equator

(Lat.19^{0}N) and in the Antarctic (Lat. 62^{0}S) that show atmospheric CO_2 levels are rising at the rate of 1.75 ppm per annum.

The data give no suggestion that CO_2 levels are going to stop rising. If CO_2 is the cause of atmospheric temperature rising then the planet is going to get continually warmer.

Has the Temperature at Mauna Loa risen as a result of the increase in CO_2 levels?

The graphs below (Malamud et al 2011) show the temperature at Mauna Loa from 1977 to 2006 (30 years). The graph on the left shows the average temperature in degrees Celsius at mid-day; this suggests that over the 30-year period the average temperature **fell** by 0.4^{0}C. The bottom graph gives the temperature at mid-night, over 30 years the temperature **rose** by 1.2^{0}C.

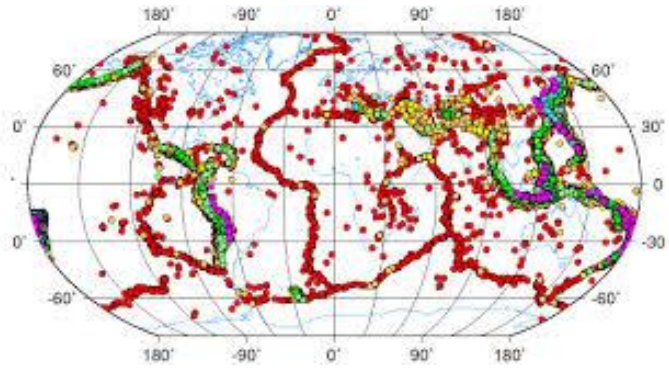


Mean Daily Temperature at Mid-Day Mean Daily Temperature at Mid-Night

Temperature Trends at Mauna Loa Summit, Hawaii: 1977-2006

Where is the CO2 coming from?

The Island of Hawaii and the King George Island are remote from industrial sites. It is unlikely that the burning of fossil fuels is the cause of the increase in CO_2 at these sites, especially as industrial activity is not increasing uniformly, year by year, on the planet. The only other major source of CO_2 is that released by undersea volcanoes. One estimate is that there are one million volcanoes under the sea. This figure would be hard to verify but we can say that there is a lot of them.

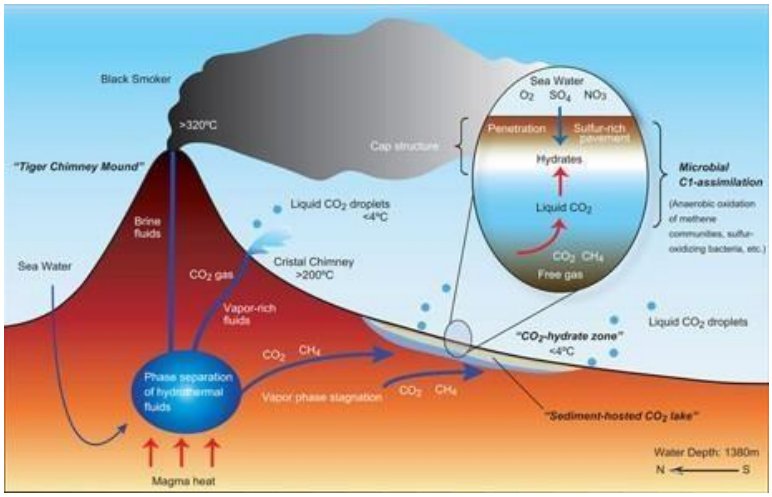


The Earth showing sites of volcanism

Active volcanoes emit a variety of substances, CO_2 included. At depths below 3 000m, CO_2 tends to be permanently trapped. Japanese oceanographers (Inagaki et all 2006) have reported huge lakes of CO_2 in the deeper parts of the ocean.

At depths of less than 3 000m, liquid CO_2 rises slowly to the surface. The average depth of submarine volcanoes is 2 600m so a great many volcanoes, possibly more than half a million, are less than 3 000m deep. At about 100m under the surface of the sea, liquid CO_2 changes to gaseous CO_2. (see the diagram below). Some gaseous CO_2 bubbles to the surface; some

dissolves in the sea-water to form weak carbonic acid (H_2CO_3), some of it is released into the atmosphere. We can hypothesize that this gas may be the major contributor to sea acidification and the reason levels of atmospheric CO_2 are rising uniformly across the planet.



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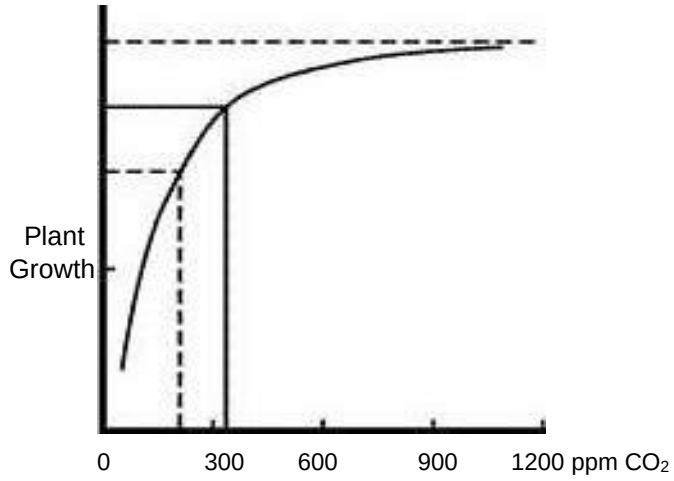
CONCLUSIONS

1. Atmospheric CO_2 is increasing uniformly across the planet at the rate of 1.7ppm each year. There is no indication that this process will cease. The Keeling Curve is showing a slight tendency to show binomial characteristics; the rate could increase in the years ahead.

   The level of 316ppm in 1956 was dangerously low - at levels below 300ppm plants begin to die. Plants continue to benefit from concentrations up to 1000ppm - see diagram. This is why vegetable growers pump CO_2 into their glasshouses, the benefits are great - see photos.



The rate of Growth in Plants and CO_2 in the Atmosphere

Fig 2: Improvement in the growth of pine seedlings when we add CO_2 to the air in a glasshouse

2. An increase in CO_2 level at the rate of 1.75ppm per annum did not give an increase in mid-day temperature at Mauna Loa over 30 years, while mid-night temperature rose just over 1^oC during the same period. The mixed signal from these data suggests it may be critical that we state the time of the day that measurements were made when quoting temperature data.

3. The increase in atmospheric CO_2 on the Hawaii and St Georges Islands has been **even** over time and far greater than could be contributed by human activity. The most likely source of increasing CO_2 in the atmosphere is the ocean but this hypothesis needs empirical testing. If it proves to be the case, then there is **nothing we humans can do to stop it**. Rather than call CO_2 a pollutant, we should be rejoicing that a potential major tragedy resulting from low CO_2 levels was avoided in 1956 and that the potential for food production on the planet is increasing year by year.

4. The International Panel for Climate Change have an agenda behind their promotion of the Climate Change dogma – see my book "That Carbon Story" www.johnpotterpublish.com.

5. I have prepared Carbon Work Sheets for teachers of Middle School Students to use. These can be accessed free of charge on www.johnpotterpublish.com/BOOKS

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