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Submission on

SSD – 11826681

Hunter Valley Operations North Open Cut Coal Continuation Project

Contents

1. WHY IS THE PROJECT BEING PROPOSED?

To have the world run on renewable energy is a wonderful idea but utopian. Even though governments around the world are spending billions of dollars on wind and solar farms, the world is many decades away of being run on renewables, if at all.

Figure 1 below is from the International Energy Agency which shows that only 2% of the world's supply of total amount (electricity, transport, cooking, heating and manufacturing) is generated from wind and solar. Figure 2 shows that in Australia 4% of total energy comes from wind and solar. The world's desire to consume energy is growing and its reliance on fossil fuels being coal, gas and oil, is still very significant.

The world and particularly Asia, is demanding Australia's high grade and very efficient coal. If Australia does not supply Asia with our high-grade coal, then Asia will find other supply sources, the quality of which is inferior to Australia's.

Figure 1

International Energy Agency graph showing that in 2019 2% of the world's total energy consumption was generated by wind and solar while 27% was generated by coal.

The growth of the percentage of wind and solar generation is very slow & the world will have to rely on coal and the other fossil fuels for several decades.

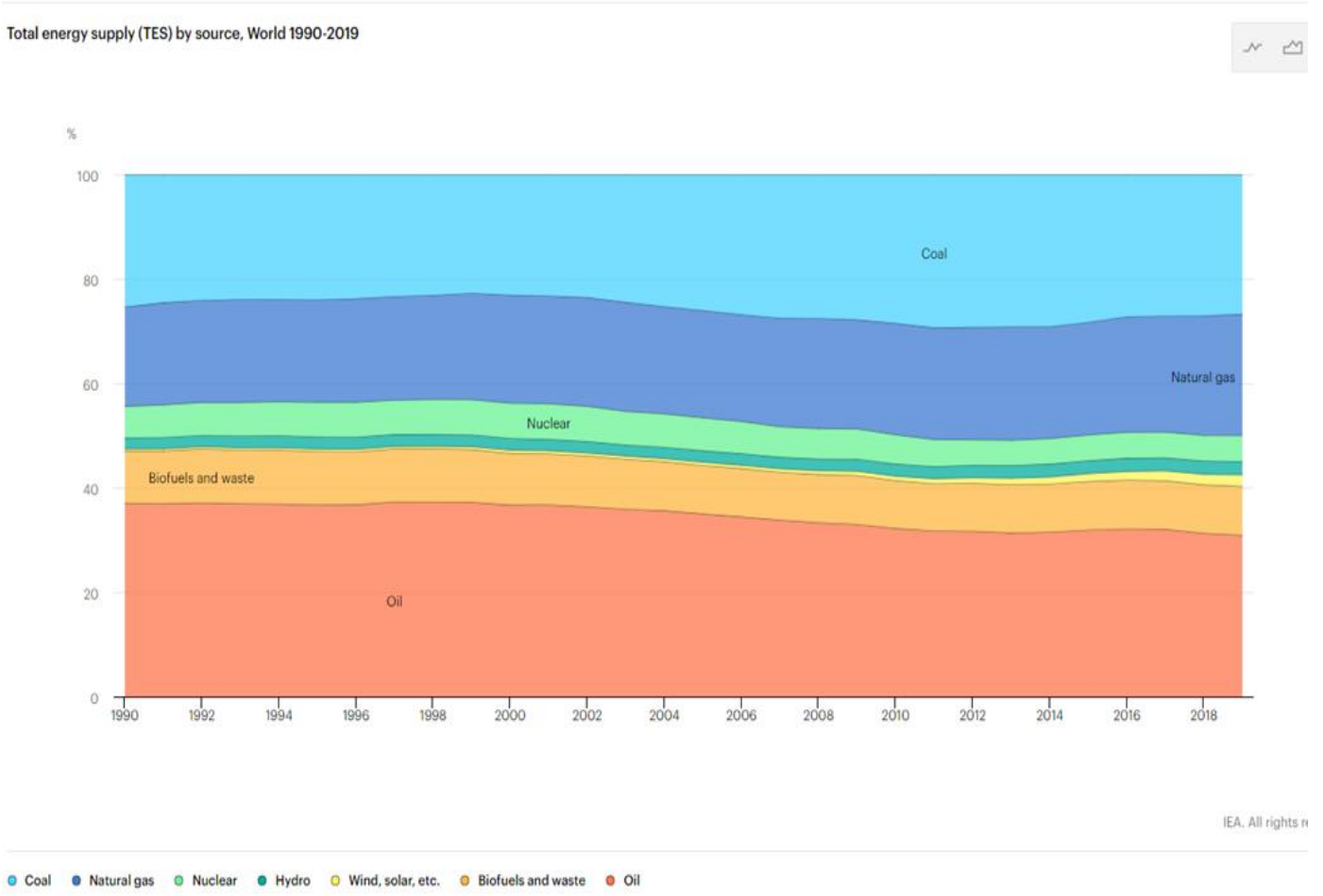
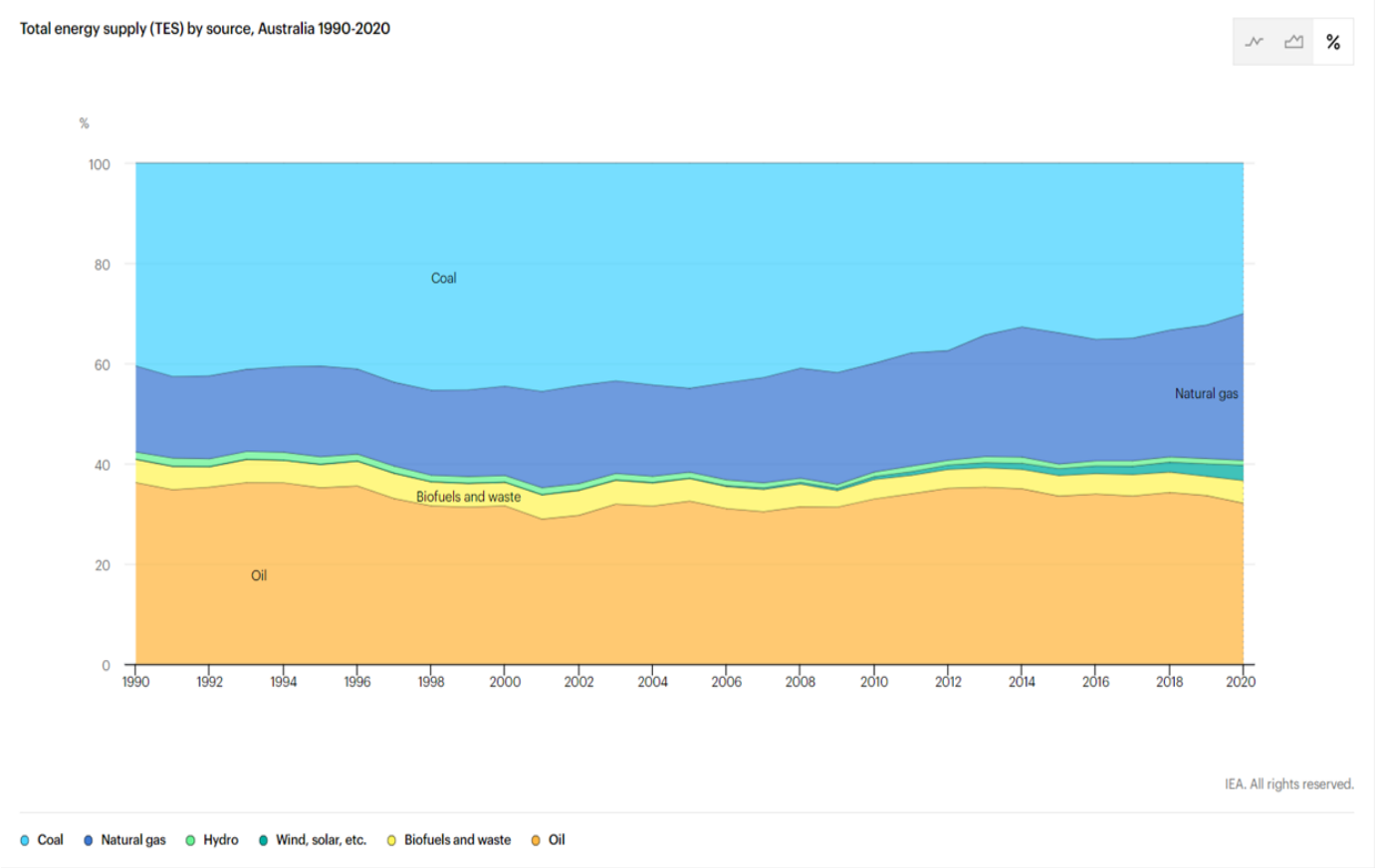


Figure 2

International Energy Agency graph showing that in 2020 4% of Australia's total energy consumption was generated by wind and solar with 32% of our energy came from coal.

Australia claims to be the world's leader in renewable energy but, just like the rest of the world, the growth of renewable energy in Australia is very slow.



2. CAUSES OF GLOBAL WARMING/CHANGE

17th & 18th Century Little Ice Age

Figure 3 illustrates 'recorded history' when, between 1600 & 1800 weather records in London show that the Thames River regularly froze over in winter. The Baltic Sea and many other rivers in Europe would also freeze over during these winters.

Figure 3

homepage > history magazine > history uk > history of england

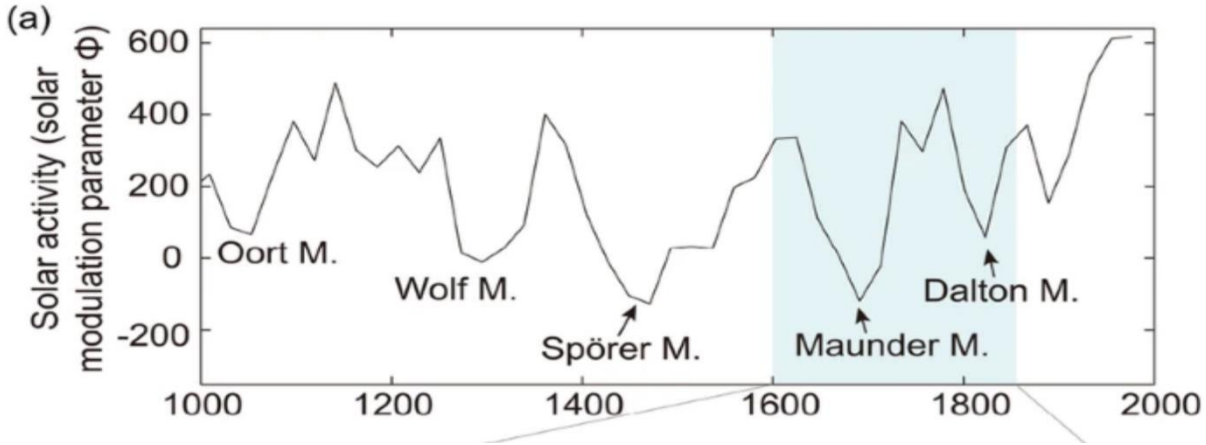
The Thames Frost Fairs

Between 1600 and 1814, it was not uncommon for the River Thames to freeze over for up to two months at time. There were two main reasons for this; the first was that Britain (and the entire of the Northern Hemisphere) was locked in what is now known as the 'Little Ice Age'. The other catalyst was the medieval London Bridge and its piers, and specifically how closely spaced together they were. During winter, pieces of ice would get lodged between the piers and effectively dam up the river, meaning it was easier for it to freeze.

What caused this Little Ice Age? It was not caused by human intervention but by a decrease in the Sun's activity.

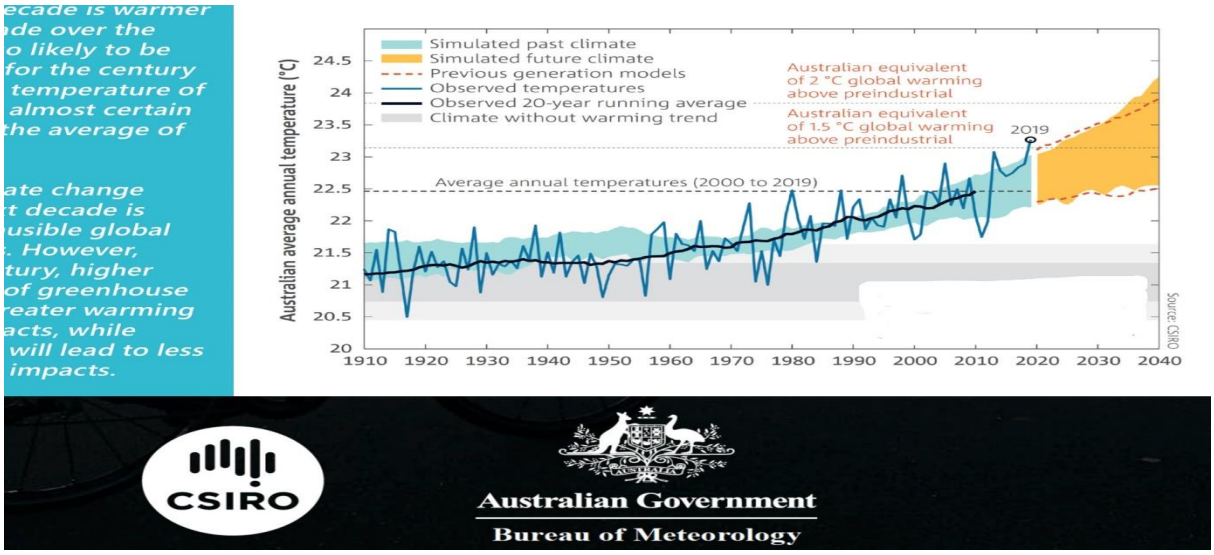
Figure 4 shows that in 1700 the Sun's activity was at its lowest over the last 1000 years – and the Earth was at its coolest in the last 1000 years. Since 1700 the Sun's activity has been gradually increasing and so has the Earth's temperature. Figure 4 shows the activity of the Sun's solar flares and sunspots between 1000AD and 2000AD and that currently the Sun's activity is at its highest in 1000 years.

Figure 4



As a result of the increase in the Sun's activity over the 20th Century, Figure 5 shows that from 1910 to 1980 Australia's average temperature rose one degree without significant human climate change influences. It also shows that the rate of increase of temperature between 1910 to 1925, 1950 to 1965 and 1995 to 2010 are all similar. This is compelling evidence that human intervention is not the direct cause of the world's temperature rise.

Figure 5 – CSIRO's Graph of Australia's Temperature Rise Since 1910



However, the Intergovernmental Panel on Climate Change (IPCC) 2021 report claims that, since 1750 solar activity has had a negligible influence as a driver of climate change. See Figures 6A & 6B below. Such a claim seems extraordinary particularly when considering the activity of Sun has been scientifically proven to have a dominant influence on the Earth's climate. Why is the IPCC dismissing such well-established scientific fact? Is it because such a scientific fact does not fit with its narrative?

To suggest that greenhouse gases have been causing global warming since 1750 seems incredible. The world's first coal fired power stations & cars were not built until the late 19th century so where did the human generated greenhouses gases come from between 1750 and 1900?

Figure 6A – Title Page – IPCC Report

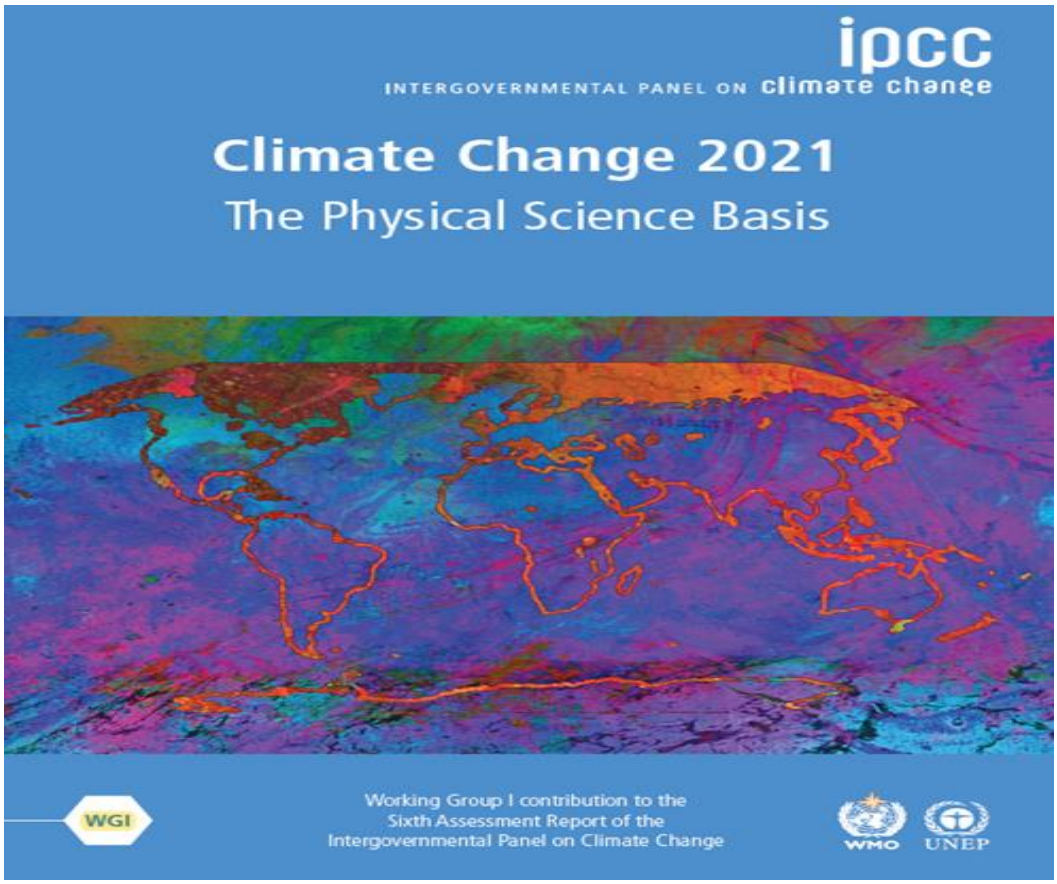


Figure 6B – Extract from IPCC Report

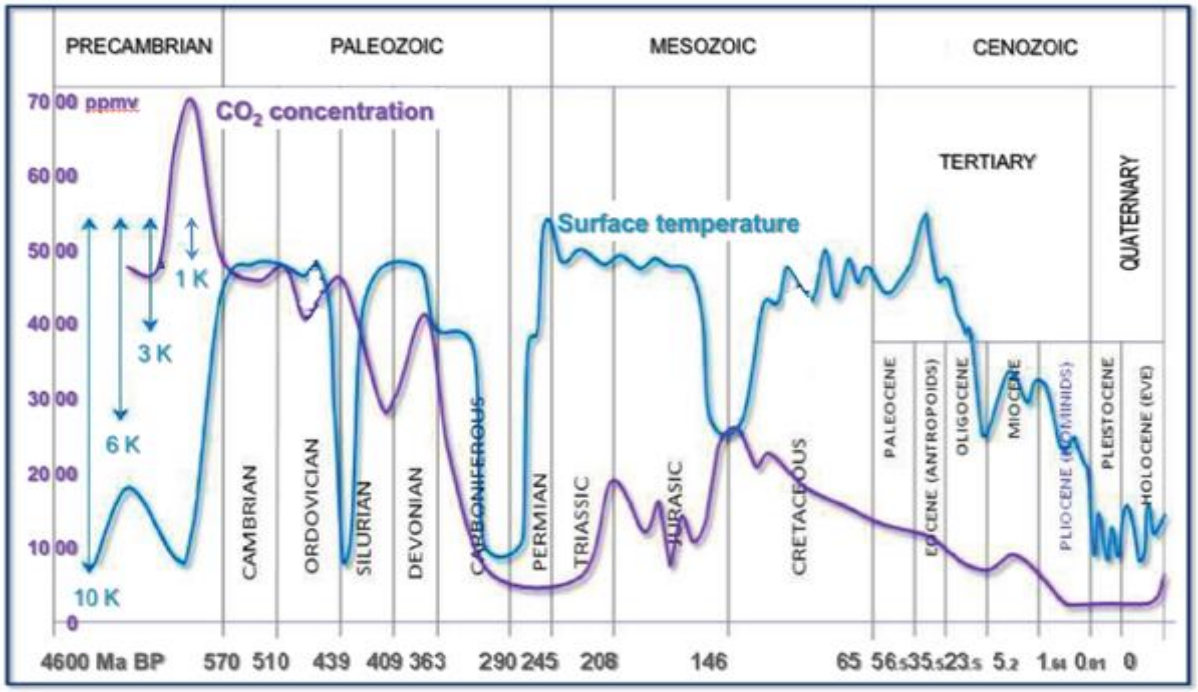
TS.2.2 Changes in the Drivers of the Climate System

Since 1750, changes in the drivers of the climate system are dominated by the warming influence of increases in atmospheric GHG concentrations and a cooling influence from aerosols, both resulting from human activities. In comparison there has been negligible long-term influence from solar activity and volcanoes. Concentrations of CO_2, CH_4, and N_2O have increased to levels unprecedented in at least 800,000 years, and there is *high confidence* that current CO_2 concentrations have not been experienced for at least 2 million years. Global mean concentrations of anthropogenic aerosols peaked in the late 20th century and have slowly declined since in northern mid-latitudes, although they continue to increase in South Asia and East Africa (*high confidence*). The total anthropogenic effective radiative forcing (ERF) in 2019, relative to 1750, was 2.72 [1.96 to 3.48] W m^{-2} (*medium confidence*) and has *likely* been growing at an increasing rate since the 1970s. {2.2, 6.4, 7.2, 7.3}

3. Earth's Carbon Dioxide Levels v Temperature Change

A very significant graph is in Figure 7 below which plots the amount of carbon dioxide in the Earth's atmosphere and Earth's surface temperature during the life of our planet. There is no direct correlation between changes of the atmospheric level of carbon dioxide and the Earth's temperature. This graph was part of a presentation by Dr Patrick Moore – a Co-Founder of Greenpeace.

Figure 7 Carbon Dioxide v Earth's Surface Temperature



The levels of carbon dioxide in the atmosphere and the Earth's surface temperature have both changed dramatically over the history of the Earth and definitely without human intervention. It is noted that the current and recent levels of carbon dioxide in the atmosphere are at record low levels and started increasing about 500 years ago before the above-mentioned Little Ice Age.

4. VEGETATION INCREASE DUE TO CARBON DIOXIDE EMISSIONS

In 1990 the carbon dioxide content in the atmosphere was 360 parts per million or 0.036%. In 2020 the level of carbon dioxide had increased to 410 parts per million or 0.041%.

Carbon dioxide is a very essential gas for life on earth. If the level of carbon dioxide the atmosphere was reduced to less than 280 parts per million, life would cease to exist on our planet. Carbon dioxide is essential for plants to grow & flourish. The flowers displayed in a florist shop are grown in glasshouses where the carbon dioxide level is artificially elevated to 1200 parts per million to improve and quicken the growth process.

The 'greening' of the planet would be a great benefit to all forms of life on Earth and in particular it will benefit agricultural crop production. This 'greening' is happening.

Research carried out by the CSIRO in conjunction with Australian National University determined that between 1982 & 2010 the 'greening' in the world's major arid regions increased by 11%. See Figures 8 and 9.

Figures 8 and 9 – Showing Results of CSIRO's Research on Global Increase in Plant Life over the past 30 Years

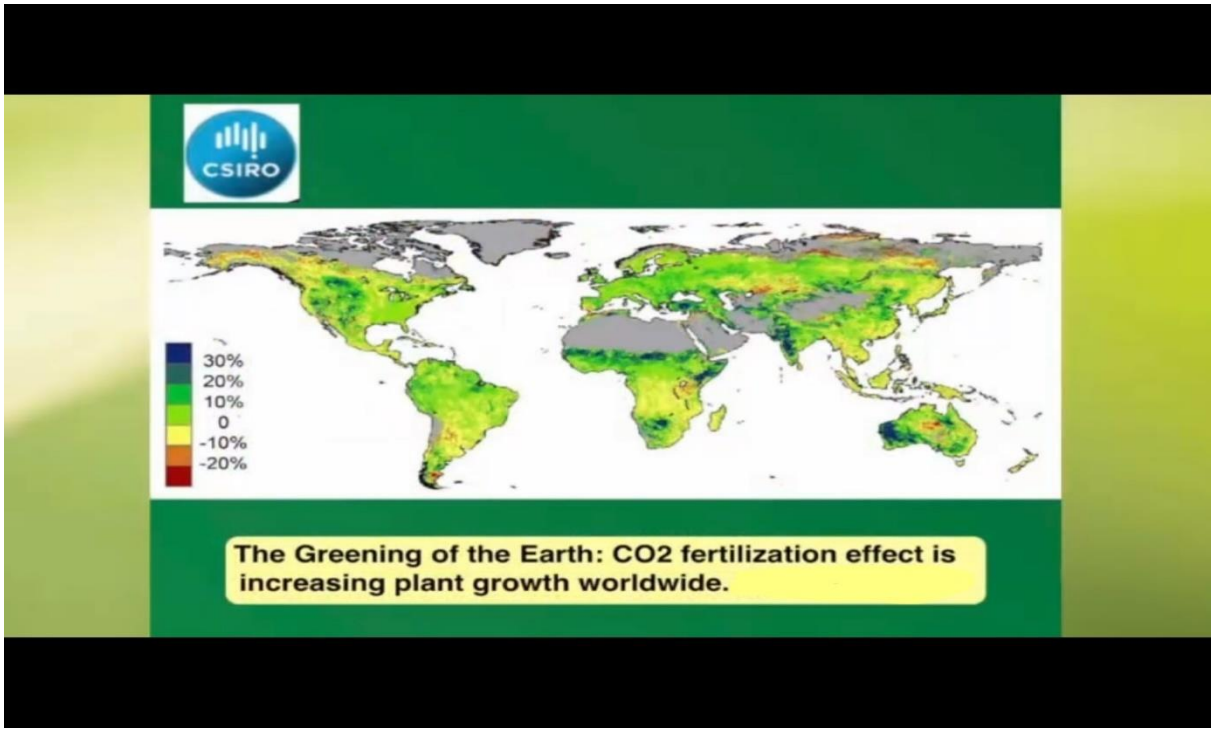
Figure 8

3 JULY 2013 • NEWS RELEASE

1 Photo 1 Audio

In findings based on satellite observations, CSIRO, in collaboration with the Australian National University (ANU), found that this CO_2 fertilisation correlated with an 11 per cent increase in foliage cover from 1982-2010 across parts of the arid areas studied in Australia, North America, the Middle East and Africa, according to CSIRO research scientist, Dr Randall Donohue.

Figure 9


CSIRO
30%
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The Greening of the Earth: CO2 fertilization effect is increasing plant growth worldwide.

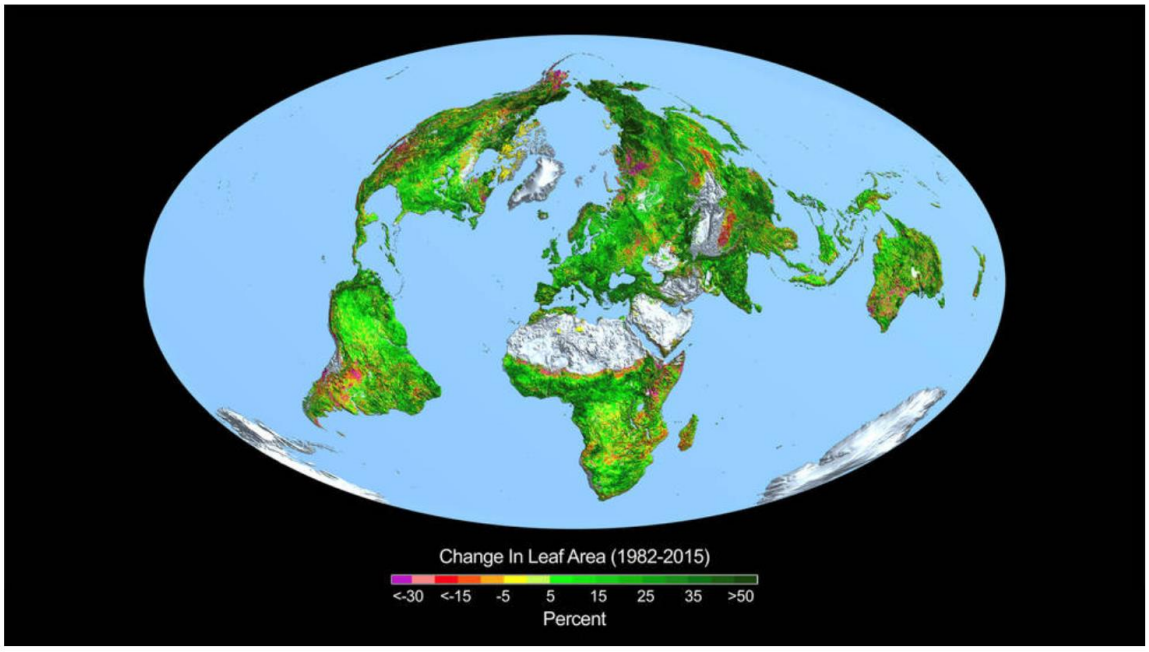
Using NASA satellite data, it has been calculated that from 1982 to 2015 the amount of foliage in the world has increased by 20 million square kilometres which is a 13% increase over the Earth's total land mass due to the increase of carbon dioxide in the atmosphere. See Figure 10.

Figure 10 – Showing Results of NASA's Research on Global Increase in Plant Life from 1982 to 2015

Carbon Dioxide Fertilization Greening Earth, Study Finds

From a quarter to half of Earth's vegetated lands has shown significant greening over the last 35 years largely due to rising levels of atmospheric carbon dioxide, according to a new study published in the journal *Nature Climate Change* on April 25.

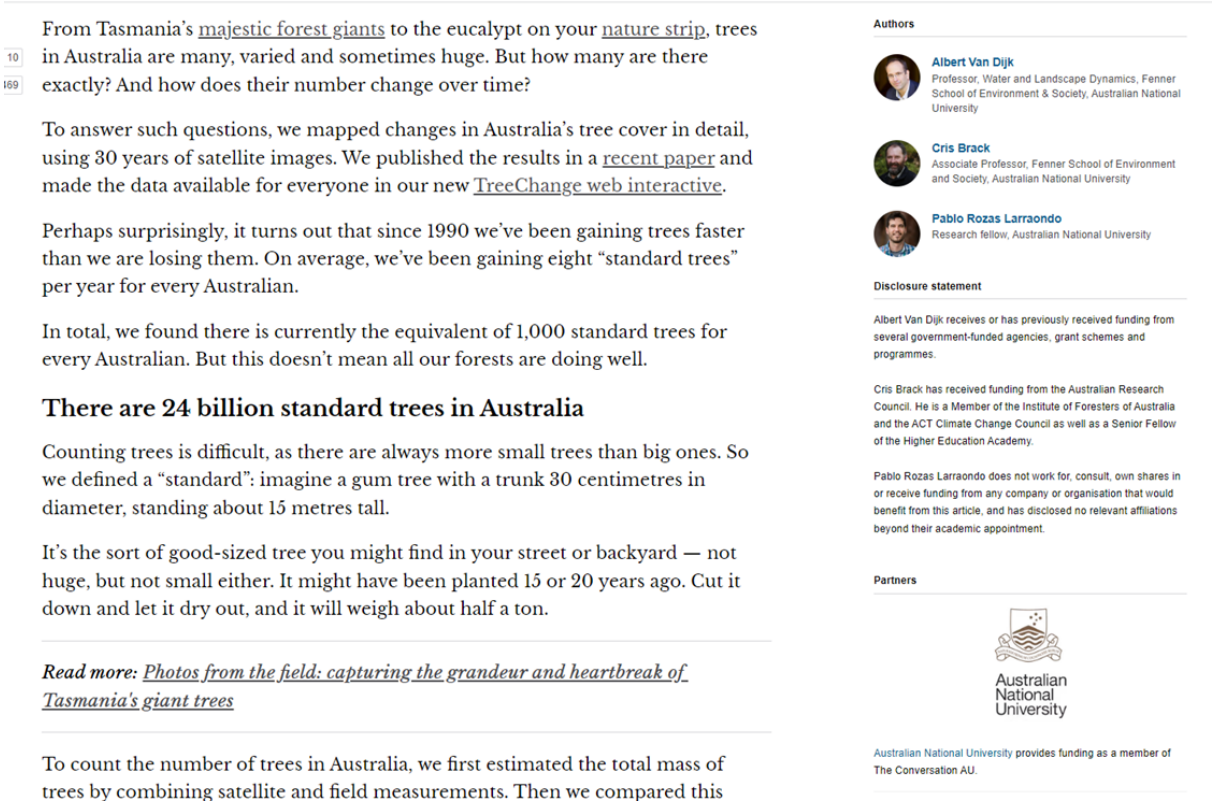
An international team of 32 authors from 24 institutions in eight countries led the effort, which involved using satellite data from NASA's Moderate Resolution Imaging Spectrometer and the National Oceanic and Atmospheric Administration's Advanced Very High Resolution Radiometer instruments to help determine the leaf area index, or amount of leaf cover, over the planet's vegetated regions. The greening represents an increase in leaves on plants and trees equivalent in area to two times the continental United States.



Carbon dioxide emissions are not as devastating to the Earth as many say they are. It must be recognised that carbon dioxide is essential for the continuing existence of life on Earth. Increasing the amount of carbon dioxide in the atmosphere increases the amount of life on Earth.

Further, a study of the number of trees in Australia suggests that Australia's natural environment is far healthier than has recently been reported. Figure 11 is part of a report prepared by the Australian National University (ANU) which estimates that there are 24 billion trees in Australia with that number increasing by about 200 million trees per year. This significant growth has occurred due to the increase of carbon dioxide in the atmosphere.

Figure 11 – Extract from the ANU Report



From Tasmania's majestic forest giants to the eucalypt on your nature strip, trees in Australia are many, varied and sometimes huge. But how many are there exactly? And how does their number change over time?

To answer such questions, we mapped changes in Australia's tree cover in detail, using 30 years of satellite images. We published the results in a recent paper and made the data available for everyone in our new TreeChange web interactive.

Perhaps surprisingly, it turns out that since 1990 we've been gaining trees faster than we are losing them. On average, we've been gaining eight "standard trees" per year for every Australian.

In total, we found there is currently the equivalent of 1,000 standard trees for every Australian. But this doesn't mean all our forests are doing well.

There are 24 billion standard trees in Australia

Counting trees is difficult, as there are always more small trees than big ones. So we defined a "standard": imagine a gum tree with a trunk 30 centimetres in diameter, standing about 15 metres tall.

It's the sort of good-sized tree you might find in your street or backyard — not huge, but not small either. It might have been planted 15 or 20 years ago. Cut it down and let it dry out, and it will weigh about half a ton.

Read more: *Photos from the field: capturing the grandeur and heartbreak of Tasmania's giant trees*

To count the number of trees in Australia, we first estimated the total mass of trees by combining satellite and field measurements. Then we compared this

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Disclosure statement

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Cris Brack has received funding from the Australian Research Council. He is a Member of the Institute of Foresters of Australia and the ACT Climate Change Council as well as a Senior Fellow of the Higher Education Academy.

Pablo Rozas Larraondo does not work for, consult, own shares in or receive funding from any company or organisation that would benefit from this article, and has disclosed no relevant affiliations beyond their academic appointment.

Partners

Australian National University

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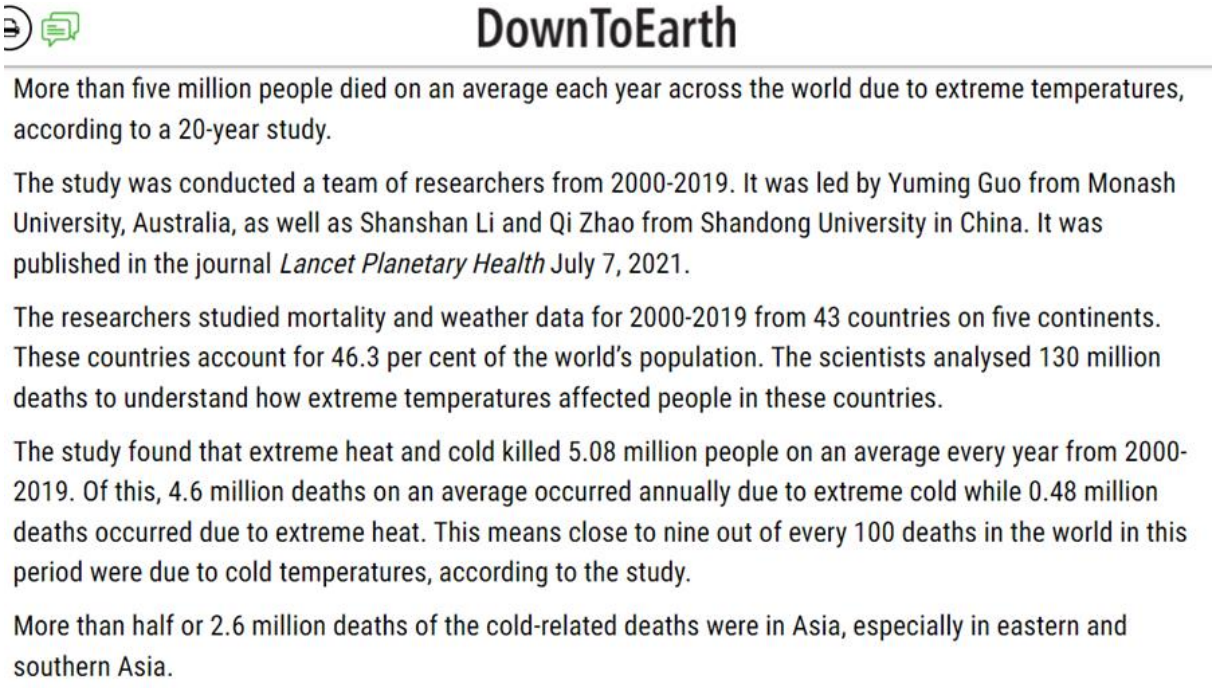
5. DEATHS DUE TO HEAT AND COLD

Figure 12 below is an extract from a 2019 Monash University research project which revealed that over 4.6 million people die each year from cold weather and 480,000 die from hot weather. Global warming is not a significant contributor to human deaths.

Claims that global warming will lead to more human deaths seems contrary to revelations of the research. In fact, it appears the opposite may occur.

Figure 12 – Extract from the Monash University Report



DownToEarth

More than five million people died on an average each year across the world due to extreme temperatures, according to a 20-year study.

The study was conducted a team of researchers from 2000-2019. It was led by Yuming Guo from Monash University, Australia, as well as Shanshan Li and Qi Zhao from Shandong University in China. It was published in the journal *Lancet Planetary Health* July 7, 2021.

The researchers studied mortality and weather data for 2000-2019 from 43 countries on five continents. These countries account for 46.3 per cent of the world's population. The scientists analysed 130 million deaths to understand how extreme temperatures affected people in these countries.

The study found that extreme heat and cold killed 5.08 million people on an average every year from 2000-2019. Of this, 4.6 million deaths on an average occurred annually due to extreme cold while 0.48 million deaths occurred due to extreme heat. This means close to nine out of every 100 deaths in the world in this period were due to cold temperatures, according to the study.

More than half or 2.6 million deaths of the cold-related deaths were in Asia, especially in eastern and southern Asia.

6. OCCURRENCE OF DISASTERS

The Environmental Justice Australia submission claims that natural disasters are increasing. Since primeval times Australia has been subject to droughts, floods and bushfires.

In 1904, Dorothea Mackellar wrote her poem 'My Country' which is etched in our heritage. Several lines of that poem are significant to this discussion, being:

"Of droughts and flooding rains";

"Her pitiless blue sky – we see the cattle die";

"For flood and fire and famine";

"She pays us back three-fold".

The poem was written at the end of the longest and driest drought in Australia's recorded history and well before there were cars and coal fired power stations. The devastation in recent years of drought, bushfires and floods is no different to what happened in the 19th century and during many millennia before then.

Droughts

Below is Figure 13 is a list of the 16 droughts experienced in Australia during the 19th Century.

Figure 13 - List of 19th Century Droughts

Droughts in the 19th century [edit]

- 1803 Drought in New South Wales (NSW) that produced several crop failures.
- 1809 Beginning of an unusually severe drought in NSW that continued until 1811.
- 1813–1815 Severe drought in NSW that prompted searches for new pastures.
- 1826–1829 Severe drought in NSW that caused Lake George to dry up and the Darling River to cease flowing.[6]

Golden Summer, Eaglemont, painted in 1889 by Heidelberg School artist Arthur Streeton, shows the semi-rural Melbourne suburb of Heidelberg during an El Niño drought.

Since 1860, when adequate meteorological recording commenced, the most severe droughts have occurred commonly at intervals of 11 to 14 years. Major droughts that were recorded later in the 19th century include:

- 1829 Major drought in Western Australia with very little water available.[7]
- 1835 and 1838 Sydney and NSW receive 25% less rain than usual. Severe drought in Northam and York areas of Western Australia.
- 1838–39 Droughts in South Australia and Western Australia
- 1839 Severe drought in the west and north of Spencer Gulf, South Australia.
- 1846 Severe drought converted the interior and far north of South Australia into an arid desert.
- 1849 Sydney received about 27 inches less rain than normal.
- 1850 Severe drought, with big losses of livestock across inland New South Wales and around the western rivers region.
- 1864–1866 (and 1868). The little data available indicates that this drought period was rather severe in Victoria, South Australia, New South Wales, Queensland and Western Australia. This drought also helped fires in the Australia outback at the time.
- 1877 All states affected by severe drought, with disastrous losses in Queensland. In Western Australia many native trees died, swamps dried up and crops failed.
- 1880 to 1886 Drought in Victoria (northern areas and Gippsland); New South Wales (mainly northern wheat belt, Northern Tablelands and south coast); Queensland (1881–1886, in south-east with breaks – otherwise mainly in coastal areas, the central highlands and central interior in 1883–1886); and South Australia (1884–1886, mainly in agricultural areas).
- 1888 Extremely dry in Victoria (northern areas and Gippsland); Tasmania (1887–1889 in the south); New South Wales had the driest year since records began; Queensland (1888–89) had a very severe drought, with much native scrub dying and native animals perishing; South Australia had one of its most severe droughts; and Western Australia (central agricultural areas) lost many sheep.[8]
- 1897 Drought in much of Queensland, compared to 1883–84 droughts.[9]

Further Figure 14 below is a graph showing the world's longest & driest droughts over the past 1000 years. Please note the number of droughts between 1000 and 1320 compared to in the last 300 years.

Figure 14 – Timeline of the World's Significant Droughts during the last Millennium

Correlation with ice cores in Antarctica suggest droughts can last for decades (highlighted as red shading) – as per **Figure 12**.

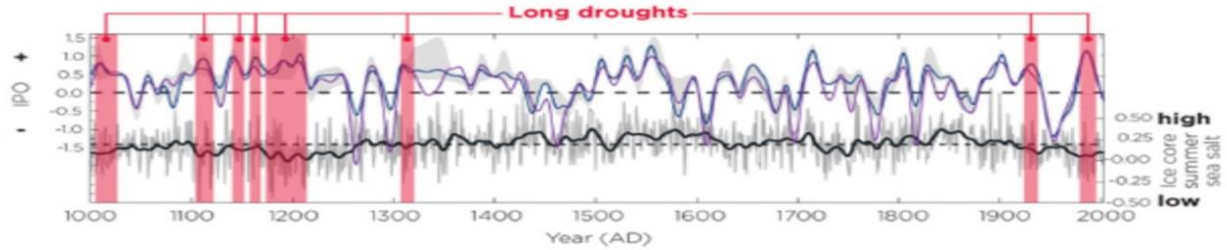
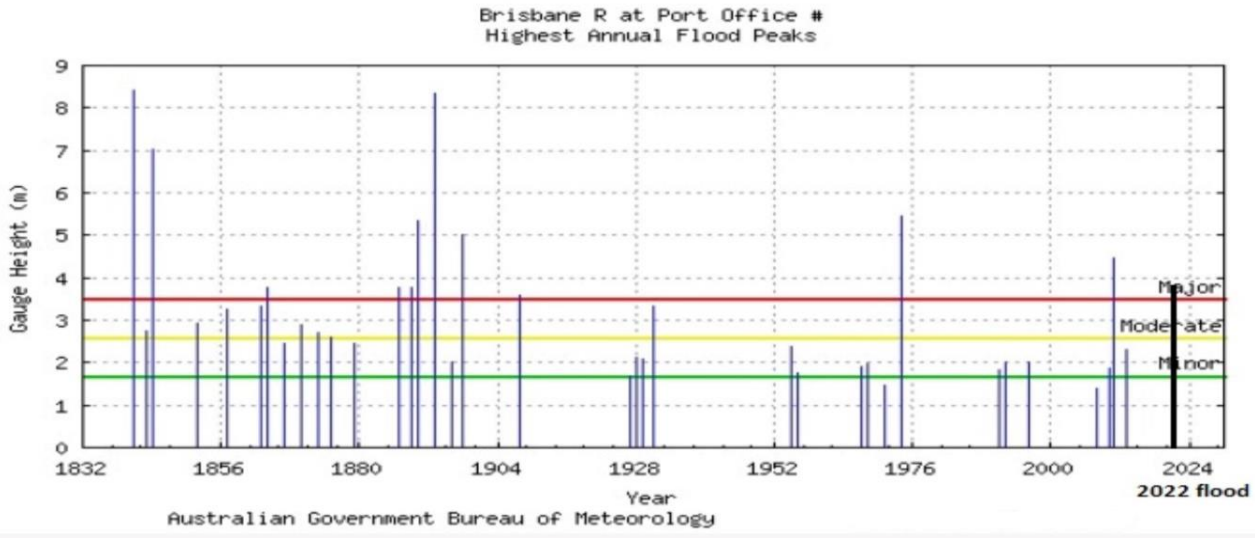


Figure 12: Evidence of historical droughts lasting decades (Vance et. al., 2015)

Floods

The Brisbane region has suffered flooding in recent years. But occurrences of floods in the Brisbane River are not as prevalent in the past 100 years when compared to flooding events in the 19th century. According to the Bureau of Meteorology (Figure 15 below) there were 8 major floods of the Brisbane River in the 19th Century compared to 4 in the 20th Century. The warming of the planet is not increasing the occurrences of flooding of the Brisbane River.

Figure 15 – Bureau of Meteorology's Timeline of Flooding of the Brisbane River



The recent devastating floods in mid-western NSW are very similar to those of 1952. Early this year flooding occurred in the Hunter Valley in NSW fortunately the flooding wasn't as bad as the 1955 flood which totally devastated the city of Maitland.

The east coast of Australia has had several wet years just the same as what occurred 70 years ago, as evidenced in Figure 16 below – before so called human induced climate change existed. It is noted six floods occurred during the 1950's.

Figure 16 – List of Floods in Australia Between 1806 and 1990

This is a list of notable recorded floods that have occurred in the country of Australia.

Date	Location	State(s)	Fatalities	Notes
1806	Melbourne	VIC	4	[citation needed]
1820	Maitland	NSW		
1852	Gundagai	NSW	89	[citation needed]
1863	Melbourne (December)	VIC	1	[1]
1869	Ballarat	VIC	2	[2]
1891	Melbourne (July)	VIC	1	[3]
1893	Brisbane flood	QLD	11	[4][5]
1893	Maitland	NSW	9	[citation needed]
1900	Western Australian floods	WA		
1909	Western Victorian floods	VIC	4	[citation needed]
1913	Maitland	NSW	1	[6]
1916	Clermont	QLD	65	[citation needed]
1923	Adelaide	SA	3	[citation needed]
1926	Southwestern Australia	WA		
1927	Wollombi	NSW		
1929	Tasmanian Floods	TAS	22	[citation needed]
1930	Maitland	NSW		
1931	Maitland	NSW		
1934	Yarra River	VIC	35	[citation needed]
1947	June 1947 Tasmanian floods	TAS		
1949	Maitland	NSW		
1950	Maitland, Gippsland, West Queensland	NSW, VIC, QLD	1	[7]
1951	Maitland	NSW		
1952	Maitland	NSW		
1955	Maitland flood	NSW	14	[citation needed]
1955	All southern states (August)	WA, SA, VIC, NSW, TAS	2	[citation needed]
1956	Murray River flood	NSW, VIC, SA		
1970	All eastern states (December)	QLD, NSW, VIC, TAS	16	[citation needed]
1971	Canberra flood	ACT	7	[8]
1971	Tadpole flood	NSW		
1974	Brisbane flood	QLD	16	[citation needed]
1984 Feb	West Dapto	NSW	not known	[9]
1986	Sydney	NSW	6	[citation needed]
1990	East Coast	NSW	7	[citation needed]

Bushfires

Unfortunately, bushfires are a common occurrence in Australia and have been so for time immemorial. Australia is the only continent on which fire-resistant trees (Eucalypts) have evolved due to the prevalence of bushfire. Other species such as Tetratheca Juncea rely on the heat from a bushfire for its germination. This is botanical evidence that bushfires have been very prevalent for thousands if not millions of years in Australia.

Australia will always suffer from bushfires with or without climate change. Environmental Justice Australia claim that such bushfires are becoming more severe.

Figure 17 below is a list of Australian bushfires dating back to 1851. It noted that quite a few of these bushfires destroyed over one million hectares of land. In particular the 1974-75 bushfires burnt 117 million hectares. The 2019-20 bushfires, while devastating, destroyed 46 million hectares. So, 50 years ago Australia has a bushfire season which burnt out two and half times more area than the devastating 'climate change' bushfire season of 2019-20.

This is further evidence that devastating natural disasters have happened in the past and will continue to happen with or without climate change.

Figure 17– List of Bushfires in Australia Between 1851 and 1975

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Date	Name or description	State(s) / territories	Area burned (approx.)		Fatalities	Properties damaged			Notes
			ha	acres		Homes (destroyed)	Other buildings	Other damage	
6 February 1851	Black Thursday bushfires	Victoria	5,000,000	12,000,000	approx. 12	0	0	• 1 million sheep • thousands of cattle	[9][10]
9 September 1895	Upper Blue Mountains fires	New South Wales	150	370	0	24	Sheds	Main Western Railway Line at Mount Victoria	
1 February 1898	Red Tuesday bushfires	Victoria	260,000	640,000	12	0	2,000		[10][11][12]
February – March 1926	1926 bushfires	Victoria	390,000	960,000	60	1,000	0		[13]
13 January 1939	Black Friday bushfires	Victoria	2,000,000	4,900,000	71	3,700	0		[5]
14 January – 14 February 1944	1944 Victorian bushfires	Victoria	1,000,000	2,500,000	15–20	approx. 500	0		[10]
18 November 1944	1944 Blue Mountains bushfire	New South Wales			0	approx. 40	0		[14][15]
November 1951 – January 1952	1951–52 bushfires	Victoria	4,000,000	9,900,000	11	0	0		[16]
2 January 1955	Black Sunday bushfires	South Australia	39,000–160,000	96,000–395,000	2	40[b]	0		[17][18]
30 November 1957	1957 Grose Valley bushfire, Blue Mountains	New South Wales			4	0	0		[citation needed]
2 December 1957	1957 Leura bushfire, Blue Mountains	New South Wales			0	170[c]	0		[citation needed]
January – March 1961	1961 Western Australian bushfires	Western Australia	1,800,000	4,400,000	0	160	0		[19]
14 – 16 January 1962	1962 Victorian bushfires	Victoria			32	450	0		[13]
16 February – 13 March 1965	1965 Gippsland bushfires	Victoria	315,000	780,000	0	more than 20	60	4,000 livestock	[20]
5 – 14 March 1965	Southern Highlands bushfires	New South Wales	251,000	620,000	3	59	0		[21]
7 February 1967	Black Tuesday bushfires	Tasmania	264,000	650,000	62	1,293	0		[10]
1968 – 69[clarification needed]	1968-69 Killarney Top Springs bushfires	Northern Territory	40,000,000	99,000,000	0	0	0		[22]
29 November 1968	1968 Blue Mountains Bushfire	New South Wales			4	approx. 120	0		[citation needed]
8 January 1969	1969 bushfires	Victoria			23	230	0		[13]
1969 – 70	1969-70 Dry River-Victoria River fire	Northern Territory	45,000,000	110,000,000	0	0	0		[22]
1974 – 1975 summer fire season (defined as October 1974 to February 1975 in Queensland only)	1974-75 Australian bushfire season[d]	New South Wales Northern Territory Queensland South Australia Western Australia	117,000,000	290,000,000	6	unknown	unknown	15% of Australia was burnt. The damage was mostly in central Australia and so it did not impact many communities. • 57,000 farm animals • approximately 10,200 kilometres (6,300 mi) of fencing	[22][23][4][24][25][26][27][28][29]

Australia and the world have always been and will continue to be subjected to the violence of nature – caused by nature.

7. CONCLUSION

Any reader of this submission may experience some scepticism due to the amount of 'climate change' information which dominates our media. However, the information contained in the submission is based on scientific or historical evidence which is difficult to ignore.

In summary this submission suggests that:-

- Greenhouse gas emissions released by humans is not the only cause of change to the Earth's climate.

- The change to the Earth's climate is not increasing the prevalence of natural disasters and heat extremes.

- Australia's flora and fauna is not being detrimentally affected by climate change.

North

Accordingly, there is no justification in preventing the extension of HVO North Open Cut Continuation Project from proceeding.