

## Accelerating Climate Change and the Living Earth

### Abstract

This perspective paper extends the discussion of the takeover of the climate system by the living Earth, colloquially known as Mother Nature, in response to the refusal of global societies to significantly reduce the burning of the fossil fuels that are driving the extreme climate change that is destroying life on Earth.

### 1. Introduction

#### 1.1 Perspective

This is my third paper on the catastrophe of accelerating climate change. The first, “Climate Change and Society” [1], discussed the power of the Fossil Fuel Empire and ‘business as usual’ capitalism in delaying taking action to reduce greenhouse gas emissions from burning the fossil fuels. For these groups “human and natural resources” are there to be exploited to maximize current profits, and destroying life on Earth (including our children) can be handled by deceptive advertising, bribery and what is now called greenwashing. The second, The Earth’s View of Climate Change [2] introduced the discussion of how it appears the living Earth, the Creation, is taking over the climate system to protect life on Earth, because our corporations have other agendas. I had realized nearly fifty years ago we were heading for a climate catastrophe, because humanity and our leaders did not accept responsibility for the Earth [3]. So I reviewed my forty-year journey to address this central question; “How do we merge science with wisdom”. I was sent to Tiruvannamalai, India where the living Earth, the Creation itself showed me directly the interconnected web of my entire life [2]. I later realized the Creation itself was now making decisions directly in the interests of life on Earth – but not in the interests of capitalist society.

This third paper starts by reviewing four keys for this understanding. First let us shift to a more colloquial image and say “Mother Nature is taking over the climate system” to protect life on Earth, because our global economic system has refused to act wisely and do this. Of course Mother Nature, the Creation and concepts like Gaia are just different human labels for the common reality that we need to understand and accept deeply. The indigenous concept of Mother Nature has an advantage that it is understood clearly by local communities. It has another huge advantage that it is free of the male chauvinism that has been dominant for thousands of years, and contributed greatly to the exploitation of people and the planet and the current destruction of life on Earth. My direct experience of the Creation, discussed in [2], helped me grasp the immense sweep of her understanding and authority over all life, as well as her simple ability to read human minds and communicate. This reality means that the living Earth system has a conscious intelligence that goes beyond Lovelock’s concept of Gaia [4].

The second is that for European culture the Council of Nicea in 325AD was critical (see [1, 2]). The Roman Catholic Church was created to meet the needs of the Roman Emperor Constantine

for male human power (as well as warfare), rather than respect for the Creation and Mother Nature. Constantine insisted that the Aramaic gospels of the indigenous Aramaic speaking teacher Yeshua (whom we know as Jesus) be destroyed. The male Catholic priests worshipped a male god safely removed to heaven, so he would not interfere with their human power. Indirectly the priests ruled societies and influenced the rise of science for more than fifteen hundred years. Christianity split into many groups, but almost none understand how Yeshua as an indigenous person chose the Truth of Mother Nature over (male) human power. In the present era Pope Francis understands many of these issues, and has pushed successfully for wise strategies on global climate change.

The third is that the indigenous world view which understands Mother Nature takes precedence over amoral capitalism. Of course this is why European and North American societies tried so hard to stamp out indigenous thought, and suppress the culture. For many centuries, Catholic priests supervised the killing of millions of indigenous people; both to seize their land, and perhaps because they feared the indigenous teachers, who had a better understanding than they did of the teachings of the indigenous Jesus. Just recently in July 2022 Pope Francis visited Canada to apologize for the church's role in running residential schools for more than a century. Indigenous children were forcibly taken from their parents, forbidden to speak their own language, and abused in an attempt to destroy their indigenous heritage. Many died and were placed in mass graves.

The fourth is the powerful concept that it is the "Truth that set us Free" to act on behalf of the Creation and Mother Nature. We attribute this deep understanding to the indigenous Aramaic teacher Yeshua. He had an intimate connection to the Creation, so the Jewish and Roman authorities had to kill him, since his deep understanding was a threat to their male human power. However it is important to understand that the overt takeover of the climate system by Mother Nature is not a religious issue. It is just the reality of the entire web of life and the Creation here on Earth that Yeshua understood so well. However this Truth is still today a direct threat to human power over nature. We believe we are the 'only' intelligent species and that we are 'in charge', when in reality we are the only species on Earth that does not listen to or communicate directly with Mother Nature, even though we could. Our society tries to hide the fact that 'business as usual capitalism' is destroying the climate system and life on Earth for profit. So Mother Nature, which is far more powerful than we are, appears to be taking over on behalf of all of life on Earth.

I discussed in [1] the strategies and webs of lies used by the Fossil Empire and business as usual capitalism for decades to suppress the public's understanding and knowledge of the rapid climate change we face. This means that much of business and society is so confused by these lies that they cannot face or even glimpse the Truth that would set them Free to directly help Mother Nature.

## **1.2 Review of Climate Issues**

The major greenhouse gases, carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>), have reached new record levels. Atmospheric levels of the critical long-lived gas CO<sub>2</sub> have risen in 2022 to 421 ppm, 50%

higher than the 280 ppm in the pre-industrial era [5]. At the annual Council of Parties review in Egypt, COP27, the 2022 Global Carbon Budget clearly showed that global carbon emissions remain at record highs with no sign of decreasing. Our industrial growth has depended on the large-scale burning of the fossil fuels that had been stored in the ground for more than two hundred million years. Methane is the second most important greenhouse gas. Atmospheric levels have risen to 1908 ppb, 162% higher than pre-industrial levels [5]. Its global warming potential is around 25 times that of CO<sub>2</sub> but its lifetime in the atmosphere is much shorter, a decade or so. It comes as leakage from the mining (and transportation) of oil and gas, from decay of organic matter in wetlands, as well as fermentation processes in agriculture and our garbage dumps. Scientists need to stand up and openly confront (with humor if possible) the many dark sides of our societies that work to increase atmospheric CO<sub>2</sub> and CH<sub>4</sub>, which are driving accelerating global climate change, simply to maintain their profits.

As climate change accelerates, extremes of temperature coupled to fires have covered much of the globe in summer 2022. In the UK, temperatures hit 40°C (104 °F) for the first time on 19 July 2022, ironically producing a national temperature map that the British Met Office had predicted as representative for the year 2050. The Met Office Chief of Science and Technology said with classic understatement “I wasn’t expecting to see 40°C during my career”.

Across southern Europe, temperatures were much higher. Santarem in Portugal reached 46,3°C (115.3°F) and Alamonte, Spain hit 45.6 °C, approaching temperatures of the Sahara. These record extremes were related to a split in the jet-stream with a region of upper level low-pressure air that was stalled off the coast of Portugal for days. It is known as a “cutoff low” because it was cut off from the normal mid-latitude westerly winds; and it pumped hot air northward from the Sahara. These temperatures have not been seen in the past two centuries of weather records over Europe, but it is clear with the rapidly warming climate they are now a reality.

Unprecedented monsoon rains produced record flooding in Pakistan starting in mid-June 2022, and one-third of the country was under water by September, and some rivers were still rising. Flooded homes and crops, polluted water and water-borne diseases spread misery, killing 1700 people and leaving 2 million people homeless. António Guterres, the UN secretary general, lamented after visiting Pakistan in September. “We have waged war on nature, and nature is striking back, and striking back in a devastating way,”

In China, July and August rainfall in the Yangtze River basin was the lowest since records began eighty years ago, giving the worst drought on record. Many regions received up to 80% less rain than the 30-year average for that period, and temperatures were 2–4 °C higher than the average. China's largest freshwater lake (Poyang Lake) shrunk to 25% of its normal size, and water levels dropped from 19 metres in June to 9 metres by the end of August, giving a large drop in hydroelectric power production [6].

As temperatures increase with rising CO<sub>2</sub> the US had record wildfires in 2022. These were followed by regions of record exceptional drought from Texas, New Mexico, Utah and Nevada to California and heat waves up to 43 °C (110 °F). Reservoir levels are critically low and threaten both water supplies and power generation. In sharp contrast, the Yellowstone region in northern

Wyoming had extreme flooding early in July with river levels 2.5ft (76cm) higher than ever recorded. This flood caused massive damage to roadways, and isolated some communities. The southwest US monsoon in August brought some drought relief to Arizona and New Mexico. One might think that the costs of climate change disasters would all be directly billed to the fossil fuel companies; but they have bribed politicians so they are not held responsible.

Major floods in Nigeria from May to October 2022 killed 616 people, and displaced 1.4 million. Over 200,000 homes were completely or partially destroyed, and 110,000 hectares of farmland were also destroyed. In late September and October, unusually heavy monsoon rains from two tropical storms brought extensive flash flooding to Thailand and Vietnam. The toll of extreme weather across the planet is accelerating as decade after decade we continue to burn fossil fuels. Many extreme events around the globe have never occurred before. It is devastating for the poorer countries of the world, who burnt so much less of the fossil fuels. It is challenging for science and society, when many events have not been seen before. I will discuss a set of these in section 2 and put them in the context of the perspective of Mother Nature.

### **1.3 Review of COP27 and COP15**

Globally the UN Framework Convention of Climate Change came into force in March 1994 and has now been signed by 198 nations. These nations review progress every year at a Council of Parties (COP). The most recent was **COP27** which met in Egypt in November 2022. Progress has been very slow, because the fossil fuel lobbyists (there were a record 636 at COP27) make sure that the interests of the fossil fuel companies are not threatened. After the 2021 COP26 meeting the UN Secretary General Antonio Guterres appointed an expert group to review the slow progress. At the start of COP27, Guterres presented their report, saying “We must have zero tolerance for net-zero greenwashing. This report is a how-to guide to ensure credible, accountable net-zero pledges.” Greenwashing is the label for the fact that the fossil fuel industry is rewriting its future plans to pretend it will remove carbon from the atmosphere many decades ahead! COP27 again showed little progress on reducing fossil fuel use. However strong leadership from Pakistan, which suffered the catastrophic floods in summer 2022 mentioned above, led to the approval for the first time of a loss and damage funding proposal for low and middle income nations. The details have been left till next year, so funding sources are unclear – except that the fossil fuel industry does not intend to contribute.

The UN Biodiversity Conference **COP15** which met in Montreal in December 2022, is a separate group concerned with restoring ecosystems and the survival of wildlife. Representatives from 188 governments gathered for two weeks and reached a landmark agreement to guide global action on nature through to 2030. Chaired by China and hosted by Canada, COP 15 resulted in the adoption of the Kunming-Montreal Global Biodiversity Framework (GBF) on December 19th 2022. The GBF aims to address biodiversity loss, restore ecosystems and protect indigenous rights. The plan includes concrete measures to halt and reverse nature loss, including putting 30 per cent of the planet and 30 per cent of degraded ecosystems under protection by 2030. It also contains proposals to increase finance to developing countries for these purposes.

The broad context here is that there has been a 69% plunge in wildlife populations over the past 48 years. The global rate of species extinction is already at least tens to hundreds of times higher than it has averaged over the past 10 million years. Much of this accelerated loss has been caused by the destruction of natural habitats by humanity for commercial or agricultural uses; coupled to the increase in climate extremes linked to the relentless burning of the fossil fuels.

A key agreement is to conserve 30% of the Earth, both terrestrial and marine ecosystems, by 2030. The expansion of new protected areas will respect indigenous and traditional territories. The language emphasizes the importance of effective conservation management to ensure wetlands, rainforests, grasslands and coral reefs are properly protected, not just on paper. One critical step is the recognition that Indigenous rights are at the heart of conservation. Several scientific studies have shown that Indigenous peoples are the best stewards of nature, representing 5% of humanity but protecting 80% of Earth's biodiversity. From Brazil to the Philippines, Indigenous peoples are still subjected to human rights abuses, violence and land grabs (after centuries of similar abuse). The language in the text is clear: Indigenous-led conservation models must become the norm this decade if we are to take real action on biodiversity. The tasks will not be easy as we have no global legal structures to protect life on Earth in the face of a capitalist system that presumes it has the right to exploit human and natural resources for profit.

## 2. Extreme Climate Events from Mother Nature's perspective

My understanding of Mother Nature's perspective is that she is responsible for all of life on Earth. The Fossil Empire [1] knew unequivocally in 1978 that a change in energy strategy away from the fossil fuels was essential to prevent the destruction of the Earth from climate change. Rather than take action, they started campaigns with webs of lies to confuse the public and politicians that are still ongoing [7], and now called greenwashing. For 40 years Mother Nature has watched the refusal of our society to act swiftly, and since she has the power, she is now intervening to save life on Earth. This interpretation lies outside our traditional science framework, but it is based on my personal experience of her power and insight, presented in [2].

### Clash of Realities

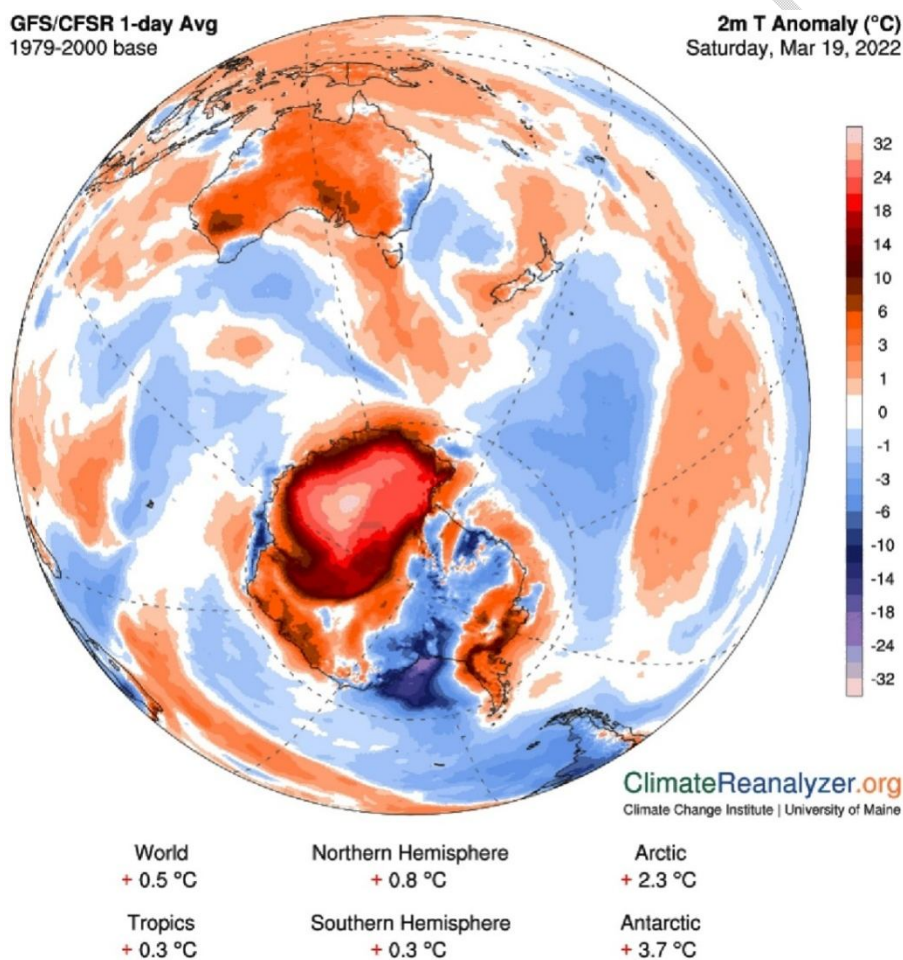
<u>Mother Nature</u>	<u>Capitalism/Fossil Empire</u>
– Indigenous world	– Human/natural resources
– Preserve web of life	– Exploit people and the Earth for profit
– <i>She is the Truth that sets you Free</i>	– Make money: \$\$
– Power unlimited	– Use money and lies to bribe & control
– Join her: she can help you!	– “We're in charge”

*Figure 1*

The clash of irreconcilable realities between the Mother Nature's perspective and business-as-usual.

This listing in Figure 1 of key aspects of Mother Nature's perspective reflects section 1.1; while the framing of capitalism will be familiar to readers and was discussed in greater detail in [1].

Let us consider some examples of extreme events that have never been seen before that appear to have an agenda from Mother Nature's perspective, starting with Antarctica. Our scientific perspective used to be that the 3000 m (10000ft) thick E. Antarctica ice sheet, which stores most of the frozen water above sea level on the planet would be stable for centuries, perhaps a thousand years. This is critical as its melt would raise sea level by 50m or 165ft. However on March 18-19, 2022, the desert air over Australia was simply advected 8000 km to the south to sit over the top of this ice-sheet (see Figure 2). A new temperature record was set at the Concordia weather station on the E. Antarctica plateau that was 39 °C / 70°F above the 30-year climatology, and a small ice sheet melted for the first time. One stunned scientist on the plateau said: "If you had told me 3 days ago this would happen, we would never, never have believed you" [8].

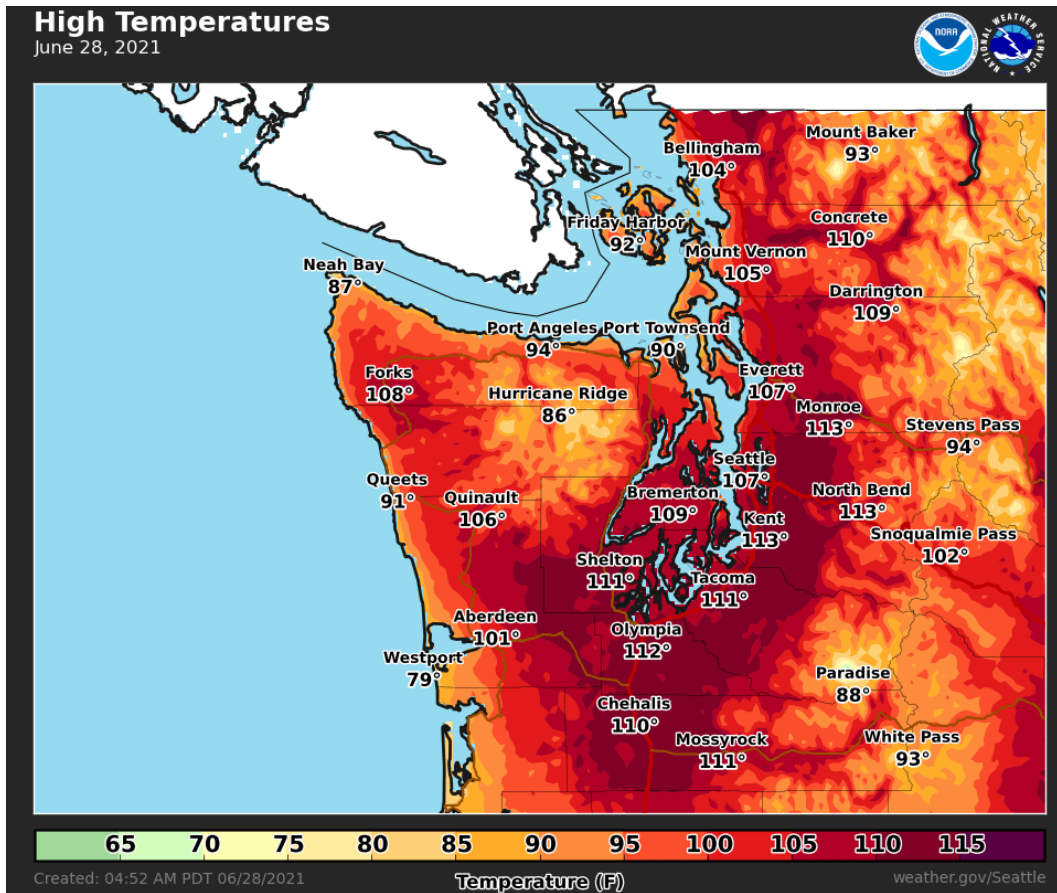


**Figure 2.** East Antarctic temperature anomaly on March 19, 2022 and flow from Australia.

Overnight, they glimpsed the possibility of a new world, where a 20 ft global sea-level rise from the combined melt of the Greenland, Arctic and Antarctic ice-sheets becomes a possibility within decades. From Mother Nature's perspective, this is one way to rein in humanity – flood the coasts globally.

Hurricane after hurricane has damaged oil wells off the Texas and Louisiana coasts in recent years but they are rebuilt. However the Texas freeze in February 2021 [9] was a radically new event. This originated in the stratospheric oscillation over the North Pole, propagated down into the Arctic troposphere and then southward as a series of freezing blobs of air that sat over Texas, freezing and destroying infrastructure for 2 weeks. The Texas infrastructure was not winterized, and much of the electrical power system overloaded and shut down, so people were freezing in their homes. From the Earth's perspective, one key target was the Texas oil refineries, which suffered more damage from this February freeze than any major hurricane.

In late June and into July, 2021, the most extreme heatwave ever recorded in the northwest US states and into British Columbia (BC) had widespread temperatures over 40°C (104°F). An analysis suggested it was a 1000-year weather event, made 150 times more likely by climate change. Typically Washington state has summer Fahrenheit temperatures in the 70's and 80's °F (24-30°C). Figure 3 for June 28, 2021 shows that extensive regions of Washington state reached temperatures above 110°F.



**Figure 3.** Washington state map of temperature on June 28, 2021.

To the north in British Columbia in southwest Canada, the small forest town of Lytton was warmer three days in a row until it reached 49.6°C (121.3°F). Imagine Death Valley temperatures in a Canadian forest. On the fourth day Lytton simply caught fire and burnt down

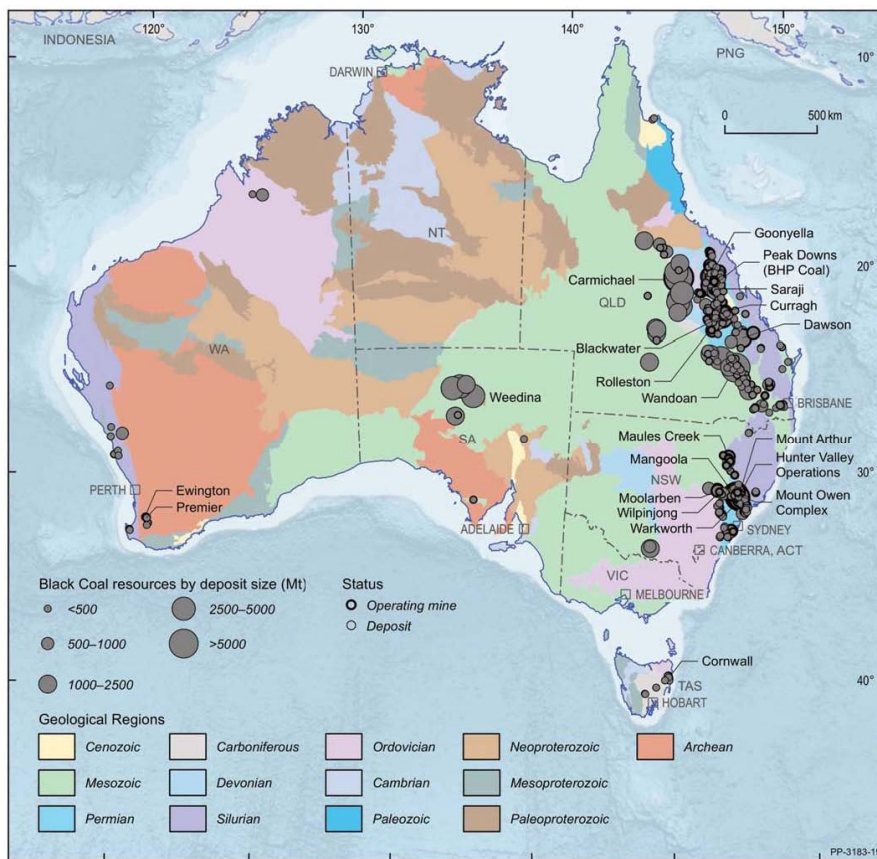
[10]. This extreme event broke the all-Canadian temperature record, set during a drought in southern Saskatchewan 80 years ago, by an unimaginable 4.6 °C (8.3°F). Canada was stunned. The extreme temperatures led to widespread fires that burnt and destabilized hillsides. Mother Nature was still planning ahead. In mid-November 2021 an atmospheric river off the Pacific dumped a month of rain on the BC region in two days. This generated massive mud and debris slides that closed the Trans-Canada Highway and the national railway line. To us a 'supply-chain interruption' but useful from the Earth's perspective, as BC is mining and liquefying natural gas and exporting products from the tar sands of Alberta, all to speed the destruction of life on Earth. Canada has no intention of closing these profitable fossil fuel industries, so continued flooding is likely. On September 24, 2022, post-tropical storm Fiona with wind gusts still up to 100mph struck Nova Scotia and Prince Edward Island, leaving them without power. It was the worst storm ever to hit eastern Canada with expected damages approaching a billion dollars. Six days earlier this storm as hurricane Fiona had severely damaged Puerto Rico's power grid.

Eastern Australia had unprecedented wildfires in the summer of 2019-2020. Since then Queensland and New South Wales (NSW) have experienced a long series of record floods across the coal mines shown in Figure 4. Sydney had a catastrophic flood July 2-4, 2022 [11]. A huge storm cell brought a year's worth of rain (about 1.2m or 4ft) in three days to some areas and led to the evacuation of 85,000 people as their homes were flooded. It was Sydney's fourth major flood since March 2021. The Earth's reason is apparent in the maps of the many coal mines around Sydney. To the north Queensland has had a series of four floods in the past year across the coal mines [12]. There was yet another huge flood from October 13-23, 2022 across Victoria, NSW and extending into Queensland [13]. Some areas got four times the mean October rainfall in 24hrs with flood waters up to 12m deep. More catastrophic floods followed in NSW Nov. 11-13, 2022 and helicopter rescue teams had to be summoned from New Zealand.

Australia is now the largest exporter of coal globally with \$44 billion in sales annually; and companies enjoy cash profit margins of about 45%. No-one is discussing the connection between climate change, floods and the coal mines in Eastern Australia (Figure 4). Instead the bizarre claim has been made that Australia is not responsible for the climate consequences as their coal is burnt elsewhere! These climate change flood disasters are making parts of eastern Australia unlivable, especially for poorer people with few resources. However the political system refuses to discuss the massive role of the coal mines in destroying life on Earth. Mother Nature has decided to act. An exceptionally long La Nina in the Pacific contributes to these floods.

Ironically, Auckland in New Zealand was struck by catastrophic floods near the end of January 2023, when a month of rainfall (250mm or 10ins) fell in one day. The total monthly rainfall was the greatest ever recorded for any month of the year.

The last week of July 2022, the state of Kentucky had extreme flooding in the Eastern Kentucky Coalfield. The people are weeping, but the Earth's perspective is not being discussed. On one level society understands that the accelerating climate crisis is out of our control, unless we rapidly cut the burning of the fossil fuels. But we have refused to act for decades because it is so profitable, and of course the mining industry is a source of local employment.



**Figure 4.**  
**Map of coal mines in Australia.**

Hurricane Ian damaged Cuba to the south and then maneuvered to target Florida on September 28, 2022. It slowed down and amplified to nearly a category 5 storm. It struck the west coast near Fort Myers after passing over Sanibel Island, causing catastrophic damage from winds, storm surge and flooding, and heavy loss of life. Heavy rain led to still more flooding, which continued on the slow moving St. John's River for months. Hurricane Ian crossed Florida and then moved out over the Gulf, moving north to hit S. Carolina. Then five weeks later on November 10, Hurricane Nicole, only a category 1 storm at the coast, crossed Florida from the east bringing damage to the east coast, as well as heavy rain and floods to practically the whole state again. The major flood stage on the St. John's River was extended another month. The governor DeSantis could be one of the Earth's targets as he is a 'climate change denier', who doesn't support renewable power and has a largely neo-fascist political agenda that has no respect for life on Earth, and certainly not the Truth! Unfortunately for politicians and other powerful people, Mother Nature can read their minds. Floridians are dispirited by the disaster, but no-one is discussing the interests of Mother Nature.

The US winter climate has been extreme in several ways. Freezing temperatures across the US severely affected road and air travel the week before Christmas, 2022. Heavy rain in California from multiple atmospheric rivers, starting on 31 December 2022 brought disastrous flooding in January 2023, following extreme drought in 2022. In January 2023, there were record numbers of tornadoes in the south (normally rare in winter). The media acknowledge climate change is involved without suggesting really dealing with it.

### **3. Fundamental Social Issues**

On a global scale this is a huge topic and I will leave a deeper discussion to others. The rich and powerful nations have failed to address the climate crisis for decades, because dealing with it would threaten their wealth. The poorer countries have suffered greatly.

#### **3.1 The Clash between the Truth that sets you Free and Webs of Lies**

As I discussed in section 1.1, "The Truth will set you free – to act on behalf of the living Creation" is attributed in the western Christian world to Yeshua (Jesus) the Aramaic speaking Jewish teacher, who was making a statement about reality from the indigenous perspective. It is globally true regardless of religious beliefs, because it is true for the Creation or Mother Nature. This Truth sets you Free from the webs of lies of politicians, advertising and all the misuse of

human power and greed, and connects you to Mother Nature. This is a vast challenge for our society, and very few are willing to face it. With clarity and effort, it becomes easier to step into the Truth of the Creator's world, and feel the refreshing power and warmth of the Freedom to act wisely. Even once we see, it still takes time to unravel the webs that have been designed to trap us.

On a geopolitical level, webs of lies are everywhere. I will use the United States where I live for illustration. The last president Trump lied repeatedly throughout his term of office to protect his fragile self-image [14], and refused to accept reality when by a substantial margin he was not reelected in 2020. He ordered an attack on Congress on 6 January 2020, but failed to prevent the nomination of his successor and the transition to President Biden. Even now much of the Republican Party, fearful of Trump's political power, still support his neo-fascist webs of lies. The Democrats of course reject Trump's lies, but are trapped in hopeful lies about economic growth, capitalism and military power. Politicians are interested in power, not the truth, so often they feel they have to lie because telling the real truth could lose votes. Many have been bribed to lie; and the media and especially the electronic media are free to lie to confuse the public, and collect money for their sponsors. Virtually all advertising uses skillful lies to persuade you to buy something that you may not need, or believe something that allows rich individuals or corporations to profit. In fact the capitalist system is based on exploiting "human and natural resources" for profit (Figure 1); and specifically exploiting individuals and the Earth itself to make money for wealthy individuals and corporations [15]. Swamped in these lies, most of society cannot possibly face the Truth that would set them Free to help Mother Nature, even though in return they would get her deep support to deal with the climate crisis on individual and collective levels.

#### **4. Summary**

The greenhouse gases that are driving accelerating climate change continue to increase every year, and radically new climate extremes keep coming. The Fossil Empire has known for forty years that it was destroying the future of life of Earth, but it is cheap to bribe politicians and confuse the public with webs of lies, when your annual profits are in the hundreds of billions. But after waiting for decades, it appears that Mother Nature has decided she must take over the climate system to protect life on Earth. This is incomprehensible to our leaders who have been lying for decades to ignore the key issues. Leaders cling to the belief that we are the smart species in charge and we can do what we want.

The massive eruption of the Hunga Tonga volcano on Jan 15, 2022 illustrates human talents and limits. The global atmospheric shock-wave circled the earth many times in both directions, and first sent a tsunami across the Pacific. With our network of satellites and models we could track everything precisely and issue warnings. Yet scientists noticed that creatures along the Pacific coast simply moved to higher elevations well before the approaching tsunami was visible (as they always do). They don't read our satellite data, so how do they know? Mother Nature just tells them to move and they listen. We think we are the 'intelligent ones in charge' but we are the

only species foolish enough not to listen to the Earth! Our technology is our substitute. The coming reality is we will now have to surrender to the Earth's perspective as climate extremes increase, but this is going to be hard for most to grasp, when centuries of militarism has trained us to 'fight, fight and never surrender.'

As climate extremes accelerate, one human reaction is to become more fearful, especially living on the coast. Nonetheless Mother Nature can read our minds and wait for some to glimpse reality. This is very important on the individual and community levels, because what we do as individuals to help life on Earth gets Mother Nature's support. One of her tools is serendipity, helping connect us so we can cooperate more easily in loving ways with each other. Another is that many individuals will realize that they too can listen to Mother Nature along with the other species on Earth. Then it becomes easier to see through the sham of consumer advertising, lying politicians and amoral capitalism that are all trying to make money from destroying the planet. Instead wise groups of citizens can replace all this with a deep understanding for the living Creation, and become free to rejoin her in love and Truth.

## References

1. Betts A.K., (2021): Climate Change and Society. *AIMS Geosciences*, 7(2): 194–218. DOI: 10.3934/geosci.2021012
2. Betts A.K., (2022): The Earth's view of climate change. *AIMS Geosciences*, 8(2): 224–232. DOI: 10.3934/geosci.2022013
3. Betts AK (1976): Letter to the Editor on "Scientists in Society". *Bull Amer Meteorol Soc* 57: 460.
4. Lovelock, James E., (2000): *Gaia: A New Look at Life on Earth*. Oxford University Press, USA, 176 pp.
5. NOAA (2022): Increase in atmospheric methane set another record during 2021. <https://www.noaa.gov/news-release/increase-in-atmospheric-methane-set-another-record-during-2021>
6. Mallapaty, S., (2022): China's extreme weather challenges scientists studying it. **Nature**, 609, p 888, 29 September 2022.
7. Supran, G. and Oreskes, N., (2021): Rhetoric and frame analysis of ExxonMobil's climate change communications. *One Earth*, 4, 696–719.
8. Betts, A.K., (2022): Accelerating Climate Change and the Living Earth. *Green Energy Times*, August, p 22. <https://www.greenenergytimes.org>
9. Wikipedia, (2021): Texas Power Crisis. [https://en.wikipedia.org/wiki/2021\\_Texas\\_power\\_crisis](https://en.wikipedia.org/wiki/2021_Texas_power_crisis)
10. Wikipedia, (2022): Lytton Wildfire. [https://en.wikipedia.org/wiki/Lytton\\_wildfire](https://en.wikipedia.org/wiki/Lytton_wildfire)

11. Wikipedia, (2022): 2022 New South Wales Floods.  
[https://en.wikipedia.org/wiki/2022\\_New\\_South\\_Wales\\_floods](https://en.wikipedia.org/wiki/2022_New_South_Wales_floods)
12. Wikipedia, (2022): 2022 Eastern Australia Floods.  
[https://en.wikipedia.org/wiki/2022\\_eastern\\_Australia\\_floods](https://en.wikipedia.org/wiki/2022_eastern_Australia_floods)
13. Wikipedia, (2022): 2022 South-Eastern Australia Floods.  
[https://en.wikipedia.org/wiki/2022\\_south\\_eastern\\_Australia\\_floods](https://en.wikipedia.org/wiki/2022_south_eastern_Australia_floods)
14. [The Washington Post](#) (2021): <https://www.washingtonpost.com/politics/2021/01/24/trumps-false-or-misleading-claims-total-30573-over-four-years/>
15. Erickson, J.D., (2022): The Progress Illusion. Island Press, Washington D.C. 20036-3319.