

# A Brief Summary of the Book

## *Your Children and Grandchildren are at Risk*

**Here is why.**

(px) refers to pages in the book

- Scientific instruments on Mauna Loa in Hawaii, have been measuring atmospheric CO<sub>2</sub> levels since 1959. **Initially the level was 315 ppm (p2).**
- The amount has progressively increased to **current levels of the amount of CO<sub>2</sub> are 465 ppm (p 14).**
- Studies of isotopes of carbon, C<sup>12</sup> and C<sup>13</sup> prove that the **CO<sub>2</sub> comes from the burning of fossil fuels (p 24-26).**
- If emissions continue, this progressive increase in the **amount of CO<sub>2</sub>** is to be expected.
- What was unexpected, and of great concern and rarely commented on, is that **both the amount and the rate of increase of atmospheric CO<sub>2</sub> are increasing (p 14).**

**The rates of increase are:**

in 1967 - 1.0 ppm/year,  
in 1987 - 1.5 ppm/year,  
in 2007 - 2.0 ppm/year,  
in 2017 - 2.5 ppm/year,  
in 2023 - 2.8 ppm/year,  
in 2025 - 3.5 ppm/year

- When the rate is measured by **GtC/year (gigatons of carbon/year)** the results are the same (p15):

in 1960 it was 1.8 GtC/year,  
in 1990 it was 3.8 GtC/year,  
in 2020 it was 5.0 GtC/year.

- **Since currently, nothing is being done to slow these rates they will just continue.**
- **It has been assumed that if we get to Net Zero emissions, these progressive increases will stop. However, because of a CO<sub>2</sub> feedback loop independent of emissions, this is not the case (p224).**
- The **Earth's Heat Imbalance** is the ratio of the amount of the sun's heat irradiation entering the earth to the amount radiated back into space (p76-79).

- The Earth's Heat Imbalance is enormous. **It is equivalent to 432,000 atomic bombs going off in our oceans every day (p 77, 224).**
- It is also progressively increasing (p77).
- As a result, the Ocean Heat Content (OHC) of the oceans is progressively increasing, and the rate of this increase is also increasing (see Post Printing Additions WINTER #13 - Chapter 16). (See 1. Below)
- This high degree of heat imbalance is due to two things (76-83)
  - a. The high level of greenhouse gases (CO<sub>2</sub> and methane) that trap the heat, i.e. the greenhouse effect.
  - b. The loss of the earth's albedo.
- Albedo refers to the ability of the earth to reflect heat irradiation back to space (p 76-83).
- The major components of albedo are glaciers and sea ice, both of which are melting (p 80-81).
- The high level of the earth's heat imbalance heats the oceans, causing them to release the CO<sub>2</sub> they contain, causing a positive feedback that further increases the heat imbalance (p 224).
- The oceans contain 50 times as much CO<sub>2</sub> as the atmosphere.
- This CO<sub>2</sub> feedback loop will cause the level of atmospheric CO<sub>2</sub> to continue to increase even after Net Zero (p 224).
- This indicates that what is needed is a massive worldwide CDR (Carbon Dioxide Removal) program (p19-20, 136-146, chapters 9 &10). Several ways to do this are outlined in the book.
- Currently, the average global temperature increases are 0.20 °C per decade.
- Our Children and Grandchildren will be living on this planet for another 50 to 70+ years or 5 to 7 decades.
- As of September 2025, global average temperature was 1.51 °C above pre-industrial levels.
- This exceeds the 1.50 °C which for years was the level that the world was desperately trying to avoid.
- The 2024 summer temperatures were higher than at any time in the past 2,000 years (p27).
- The CO<sub>2</sub> levels are increasing at 35 ppm/decade. This will produce 465+(35 x 5 or 7) or 640 to 710 ppm by the time our current youth are 70 or older.
- This equates to a global temperature of approximately twice the current temperature,

**i.e. (2.5°C – 3.5°C) (greater than pre-industrial levels), and this does not consider the increasing rates of the OHC.**

### **The following will be some of the consequences**

- large scale crop failures due to draughts and floods, with mass starvation and mass migration of climate refugees, with 200 to 400 million displaced, and enormous political stress on some countries like the U.S.**
- 50-60% of the population exposed to excess heat. This will be deadly to older adults, especially those with CKD (chronic kidney disease), CVD (Cardiovascular Disease), and diabetes and where air conditioning is unreliable.**
- high wet bulb temperatures will be un-survivable, even in the shade (p32)**
- loss of Antarctic glaciers, WAIS and Thwaites (p 57-59) causing additional increases in sea level.**
- multi-meter sea-level rise with major cities – Miami, NYC, Norfolk, New Orleans, Shanghai, Hong Kong, Mumbai – lost.**
- large scale melting of permafrost with massive release of methane. (p 37-38).**
- methyl clathrate melting would produce even larger releases of methane (p 60-62).**
- methane is 25 times more potent of a greenhouse gas than CO<sub>2</sub>. (p 62).**
- a 10 to 20+% decrease in global GDP.**
- 99% of coral reefs lost.**
- worldwide wildfires intensify dramatically (p 34-35).**
- freshwater scarcity for up to 3 billion people,**
- large areas of the Amazon and African forests die.**
- Greenland and Antarctic ice sheets show irreversible melting (p 57-60)**
- The amount and rate of increase in atmospheric CO<sub>2</sub> accumulation and the level of the earth's heat imbalance steadily increase (p77 & 225).**
- Plants are begin to produce CO<sub>2</sub> instead of consuming it (p 62-63).**
- The Atlantic Meridional Overturning Circulation (AMOC) has stopped, resulting in a temperature drop across the UK and Europe of 10 to 50°F with massive crop loss (p 84-86).**

- The amount and rate of increase in atmospheric CO<sub>2</sub> accumulation and the level of the earth's heat imbalance are steadily increasing (p77 & 225).
- Plants are beginning to produce CO<sub>2</sub> instead of consuming it (p 62-63).
- Climate change and global warming are real, not a hoax, and will be a great danger to our children and grandchildren.
- In summary: • Atmospheric CO<sub>2</sub>, • the Earth's heat imbalance, and • the ocean heat content (OHC), are all increasing, and most concerning, the rate of increase is also increasing. It is the heat content of the oceans that drives increasing global surface temperatures, increasingly severe hurricanes and all the bad aspects of global warming.
- And even more disturbing no countries in the world are doing anything to counter these effects. They are either denying climate change is real, as now in the U.S., or concentrating their efforts on reducing emissions – important, but only CDR will solve the problem, and no one is doing that to a sufficient degree to help.
- It is critical that the private sector, fill the gap.
- We have outlined for ourselves, the many steps that need to be taken to activate each of the four fixes described. We feel that this step wise approach, where each step costs less than the total, with the help of many concerned individuals, will eventually get all four fixes up and running, and finally begin to reverse global warming and save our children and grandchildren. If you would like to help, see p 207

P.S. the book has 105 illustrations and 315 scientific references, which you can read on your own using Google Scholar - and draw your own conclusions.

1. Since this article came out after the book was published, if you would like you can read it for yourself. The paper documents the increase in both the level and rate of increase of the Ocean Heat Content (OHC). The article is Pan, et al, 2026: *Ocean heat content sets another record in 2025. Adv. Atmos. Sci.*). It can be downloaded free on Google Scholar. Especially note Figures 1-4. The authors conclude that rising OHC remains the fundamental driver for global sea-level rise via thermal expansion, and of marine and land heatwaves, and intensifies extreme weather events by increasing heat and moisture exchanges with the atmosphere.