

Global Climate in the 22nd Century

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Abstract

Earth's global biosphere recently has deteriorated beyond what climate forecasters had previously hoped would not occur for several decades. In 2024 global average temperatures reached the critical 1.5 degrees Celsius above the reference base that climatologists have feared could lead to a tipping point of no return. What nastiness will the full 22nd century and beyond reveal, while average global temperatures rapidly rise beyond the historical base by 4.0 degrees and more?

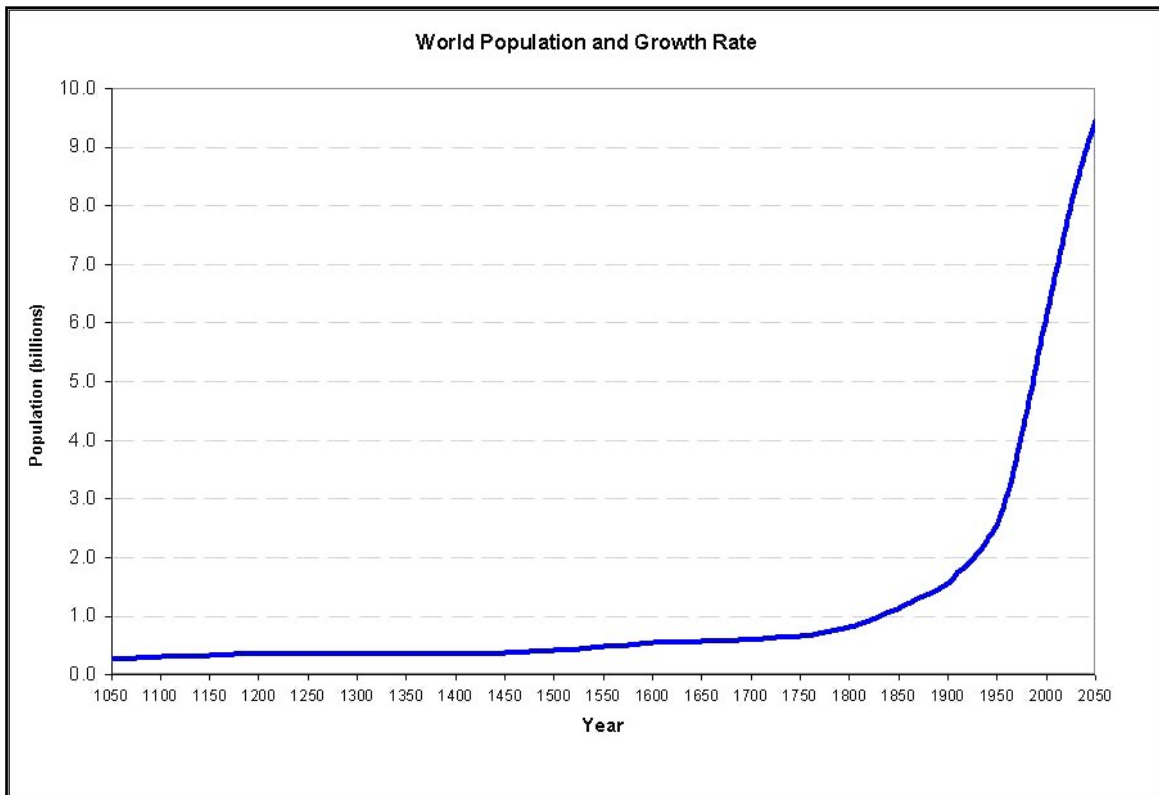
This essay builds on several of my earlier climate theses, *all* of which have been ignored by the myopic "drill, baby, drill" crowd, and by others who believe the impending climate crisis is fake news. We too-clever apes inhabit a unique global Garden of Eden floating deep inside black space; but we only see the local star.

Our thin biosphere supports *eight billion* humans. Can spiritual people *honestly expect* any galactic divinity to rescue us, after we have willfully chosen pollution over stewardship? I still believe in our *collective potential for good*, so I proceed with cautious hope. Even if we hyper-keystone humans choose to be honest, *can* we sufficiently correct climate vectors within the rest of this 21st

century? Very few alive today will inherit our heedless mess in the early 22nd century, except for our youngest grandchildren.

With accelerating *Malthusian "positive feedback," climate change* likely will *soar* deep into the 22nd century, and beyond. **[1]** A point in time will arrive where the cliché, "better late than never," squeezes into "never." You may think I am just another ecological extremist, but this free essay will introduce scientific data that point toward humanity's existential challenges. I do support global economic prosperity, with equity and ecological balance. There are several ways where science and clear policy could synergize, but a balanced synthesis is becoming more dream than engineering.

When I was a young child there were only an estimated 2.5 *billion people across Earth's entire biosphere*. Now, in the same finite space atop our rocky planet, there are over 8.2 *billion people* requiring daily food and shelter. Many poor countries already are like the Kingdom of Jordan, where its mostly hot and



arid land can support food crops only for three million people, while most of its growing population of 11.5 million souls eats donated grains.

There is a growing likelihood for severe Malthusian “positive checks” on the population surplus. There is also an astonishing cruelty inside certain donor nations. Civilizations ideally would coordinate to reduce and stabilize global population pressures. Elegant duality could yield what I wrote about in 1974 as *planned “negative population growth.”* From a Malthusian perspective [where population tends to increase geometrically; while resources tend to increase linearly], donor food without wise population planning promotes unsustainable long-term population globally. Earth thus has a deep management problem.**[2]**

The experience of *historical time* among humans is very unlike the seeming punctuated equilibrium of *geographical time*. For humans a single million years backward is when prehuman apes were around. A single million Earth years forward from now will reveal who knows?

In contrast, life on Earth has been around for more than a billion years, starting with such as cyanobacteria capable of photosynthesis. If there is life left on Earth a billion years hence, that life will mostly be tiny aquatic organisms. Advanced Earth species may all be erased by then. That’s trillions of *precious* life forms to be snuffed out, accelerated by today’s arrogance.

This essay must be somewhat speculative, because we are talking about possible future events. Nevertheless, data trends can help model some futures. For example, going to Mars to hide out inside volcanic lava vents, after first planting a Musky flag, is the worst hubristic fantasy. If a Martian Noah’s ark refuge from possible global nuclear war were soon established with wasted taxpayer cash, just one small nuclear weapon launched to any vanity Mars camp would instantly erase it.**[3]** Indeed, the mere fact of Earth’s modern civilization being obliterated would doom any Mars outpost without critical ongoing supplies.

The Boiling Frogs Effect

I wrote an essay on the boiling frogs effect.[4] While sadistic lab students are *slowly* increasing the heat of water in an open glass vessel where a happy frog is sitting, there comes a sneaky temperature point where the frog cannot jump out, and it soon boils. We ape humans are somewhat like doomed frogs inside wet lab jars. The *critical difference* is that real frogs are clueless and alone. In no way are people in modern civilizations clueless and alone. Still we essentially “sit in heating water of our own making,” and don’t jump free. It’s pure absurdity.

Maps versus Words

Maps are not unique to humans. Migrating birds, whales, and various other species move for thousands of miles back and forth between their feeding zones and reproducing places. Human maps have likewise been used as portals to realms of interest, with ways to get back home. In nature, life’s story often follows repeating cycles. Even in pre-life, nature’s repeating cycles, such as ocean tides, are a core feature. What happens when there is only one climbing *climate cycle* that does not simply repeat?

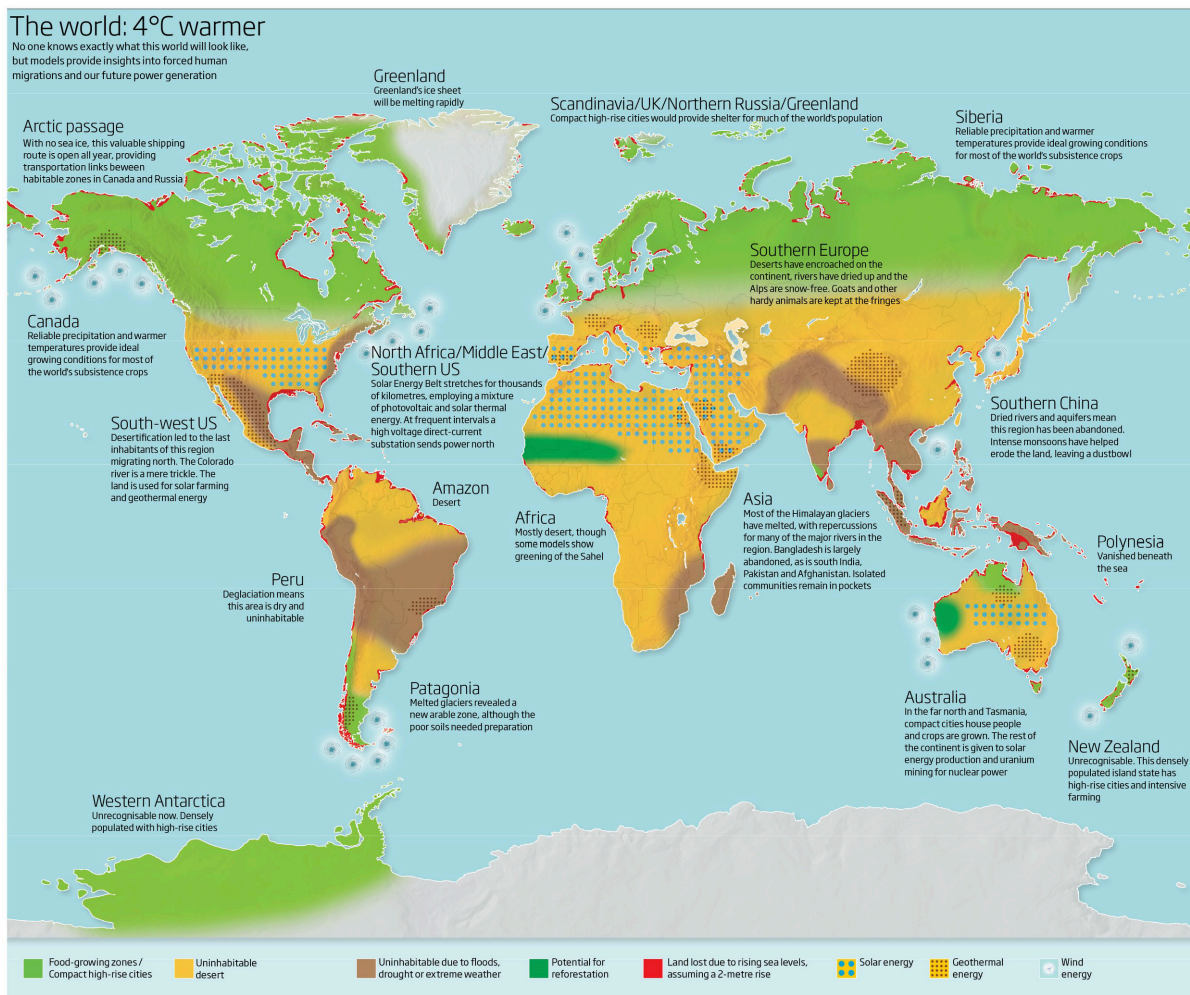
The maps and graphs herein are not about repeating natural cycles, but about transformational vectors that can be mapped across all climate zones. In future maps human time will not simply repeat. It dialectically changes in linear ways that benefit some, and cruelly crushes others.

From a timeless and distant perspective, any sort of change just is. It is only from within the myopic perspective of “winners” becoming “losers” that the real drama and pathos unveil. Our species is the only one that has ever had the *opportunity* to trash its total biosphere. Maybe, just maybe, we could also become the first and only species to correct the global slide into ecological chaos. Otherwise, *we apex apes may be just smart enough to trash our natural world – but not wise enough to save it.* [5]

The 2010 Map Revisited

Two of my previous essays featured a speculative future Earth, envisioning our heating globe *at* 4.0 degrees Celsius above the historical industrial average. **[6]** That's only about 2.5 degrees higher than "today's new average." What we witness emerging today is NOT a "new normal." It is a steeper slippery slope where everything at first seems fine, until it is "boiling." **[7]**

Enlarge the map image's page below to 400%, to read this map's words. I below comment from our 2025 perspective. Remember, this map is heuristic – and likely will reflect the intermediate state of rapid change by the early 22nd century, when some people we know and love today will live to face unprecedented challenges.



COMMENTS ON THE 2010 MAP

(1) Our nearly spherical Earth is presented in flat, rectangular form. To achieve an imaginary square Earth surface, we stretch out both the Arctic north, and the Antarctic south. On this map there will still be some temperate regions, which are shown in green. However, the amount of habitable green real estate in reality is much smaller than visually implied, especially since rising ocean levels are very underestimated.

(2) Archaeologists are finding remnants of early towns and ancient shores below nearby seas. These ruins are signs of vast, now melted, ice sheets. Seas have also been higher than today's medium levels. Adding up lower and higher historical sea levels, we get an idea of the nearly 500 ft. range. Right now, with sea levels starting to rise again from man-made carbon-gas climate heating, we will soon see flooding of critical human activities in such places as China, or Florida, or Micronesia.**[8]**

(3) Recent field data from permafrost regions in Siberia and elsewhere point to vast "green" areas that will turn swampy, and will in some places sink, as prehistoric and primordial methane is released. Vertical shrinkage will further limit future relocation space for climate exiles from farther south. Also, methane gas is more potent for heat trapping than is carbon dioxide gas, helping to supercharge global warming at the very time we hormonal "human rabbits" need more decent and affordable living options.

(4) Tropical regions will have assorted fates. The Amazon rain forest as we know it will mostly transform into savannas. Africa, the second largest continent, will suffer many climate disasters, much of which will force extinctions of precious species.

(5) Antarctica looks absolutely huge in this map, due to distortion. Nevertheless, there will be some additional room for southern hemisphere climate refugees, except that soil under recently melted glaciation will be of minimal value.

(6) Siberia looks like a semi-Eden, but maybe not. Hopefully Russia in the next century will be stable and democratic. On the other hand, China will likely annex or control contingent areas of Siberia for its own people.

(7) Greenland will not be bought by America. Americans will flock there as melting reveals land and mining resources. As long as military tensions persist in the Arctic, American military forces will be in Greenland, no matter who in Europe or America owns it.

(8). This map highlights local and regional areas where vicious non-nuclear wars likely will be fought over control of fresh water. A prime area is the cradle of civilization in northwest Iraq, where the real Garden of Eden was said to be. Other arid areas abound in southern Asia, and even in what we now call the USA. What remains of de-facto green oases will likely be overrun by hordes of barbarians lusting for the new gold, fresh water

(9) The most important things about this 2010 map are the strong preconditions for brutal reduction in population within local areas of America, Europe, and Asia. Relocating peacefully many billions of people will at best be very expensive and disruptive. It is possible that some power players will use "limited" nuclear war to thin the herd. However, any idea of a limited nuclear war is a sick joke, as multiple nations already possess many nukes.

The fantasy of actually winning any nuclear regional or global war is pure madness. During the Cold War the idea of MAD, or Mutually Assured Destruction, helped deter psychopaths in the USA and USSR. Extreme war might be the event that hands scorched lands over to greedy space-alien robots waiting above.

It's amazing how collective, private "fun in bed" could lead to global devastation. Such is our unknown power; such is our weakness. Our individual brains still have about 100 trillion synaptic connections. Let's use the wet supercomputers between our ears for something better than ordering delivery pizzas, and disguising our lazy sloth with full-body deodorant sprays.

References

- [1] <https://astronomy-links.net/climate.surprise.pdf>
- [2] <https://astronomy-links.net/TheAmericanEutopia.pdf>
- [3] <https://astronomy-links.net/space.billionaires.pdf>
- [4] <https://astronomy-links.net/Boiling.Frogs.pdf>
- [5] <https://astronomy-links.net/great.filter.theory.pdf>
- [6] <https://astronomy-links.net/Accelerating.climate.change.pdf>
- [7] <https://bigthink.com/strange-maps/what-the-world-will-look-like-4degc-warmer/>
- [8] <https://astronomy-links.net/Global.Warming.Oceans.pdf>