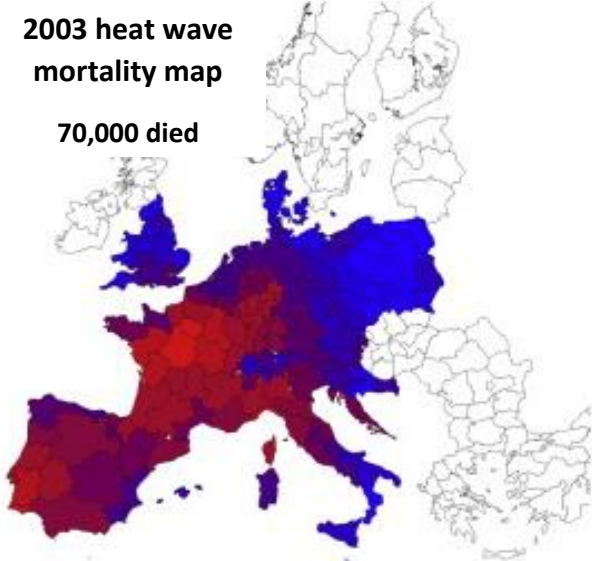


The New Climate Priority

FROM PREVENTION TO REPAIR

2003 heat wave mortality map

70,000 died



Where are we going? Be brief, now.

WHC: As the phrase goes, “Straight to Hell.” But it isn’t obligatory, you know. Alternatives do exist.

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What’s our current climate goal? “Delaying disaster, a little.” Very little. Cutting our emissions of fossil fuel CO₂ in half tomorrow would not reduce our short- to medium-term climate problems. The old prescriptions are now painfully inadequate; they omit any notion of climate repair that might allow us to retreat from the looming climate chaos. We are simply slowing our approach to chaos a little, leaving our children on a trip straight to Hell.

But the trip to Hell isn’t obligatory—just likely if we don’t act decisively to repair climate disease. And Hell is not my metaphor for hot. It’s for the suffering. A population crash will feel like Hell: war, famine, epidemics, and genocides. Not just losing family and friends but becoming a climate refugee oneself.

For effective climate action, what is now an appropriate goal? **“Backing out of climate’s danger zone, quickly”**—a cool-down to save our children and ourselves via repairing climate during the next twenty years, then regulating global temperature thereafter. When we see disaster ahead, we need to stop and back up, not merely slow down a little. Reducing annual emissions is indeed necessary. It’s just not sufficient. Our climate thinking now needs to change.

So-called “Climate Solutions”

Fix the cause and you fix the problem? Not so fast. Getting at the root cause of climate change by reducing fossil CO₂ emissions was a reasonable plan fifty years ago, but it didn’t work out very well. The excess CO₂ overhead has tripled since then. Now we have a big cleanup problem.

Better miles per gallon, electricity from solar and wind, better light bulbs, a carbon pollution tax: while all are important for sustainability, those progress-as-usual improvements still get advertised as climate “solutions.”

They are not. Not a single one of them. Not even in combination. (So much for “Every little bit counts.”) A vague influence does not count as a solution.

And why are they so ineffective? That’s because they are not subtractions, as in a drawdown or cleanup: they are mere reductions in growth rate. They are analogous to reducing flow by tweaking the faucet, not to the accumulation in the slowly draining sink that threatens to overflow. Emissions reduction does not reduce the accumulation already up in that CO₂ sink in the sky. The accumulation is what overheats us.

We dump stuff into the air and trust natural processes to get rid of it. Dust and smoke particles are usually washed out by rain in a matter of days to weeks. “It rained mud,” my mother said of the great dust storms of 1936. Volcanic sulfur in the stratosphere takes several years to go away. For most of the greenhouse gases, nature takes several decades to ‘drain’ this year’s emissions. **But for CO₂, nature’s cleanup takes a thousand years.**

Nature’s cleanup takes too long

That’s why our present climate paradigm cannot handle the problem. (*It never could.* But don’t get me started.) Just imagine a sink that takes a thousand years to drain. For all practical purposes, the fossil CO₂ that we add stays up there until we remove it. The accumulation is what creates the overheating and leads to the extreme weather events.

The politicians’ current focus on reducing annual emissions, instead of focusing on the accumulation, is reminiscent of confusing 30 miles per hour with 30 miles. The way our leaders talk (when they do), you’d think that emissions *were* the climate problem and their reduction is the remedy. Perhaps inadvertently, they convey the impression that if we reduce annual emissions to zero someday, we’ll have solved the climate problem.

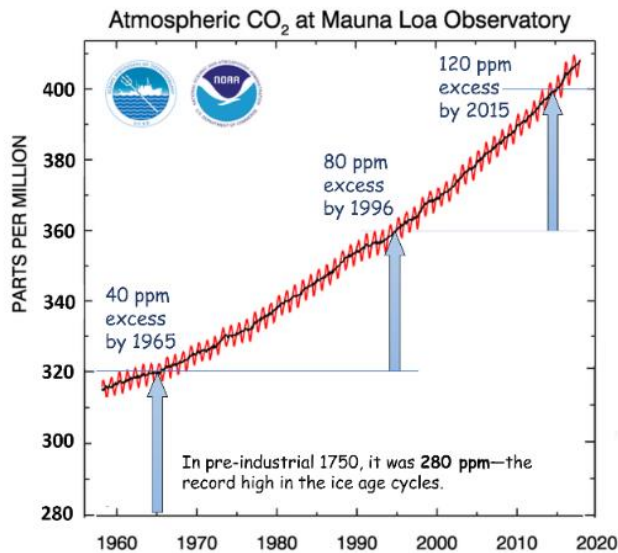
Not so. We would still have the CO₂ that accumulated year after year along the way to that grand zero-emissions year. Let us consult the track record.

CO₂ excess tripled in fifty years

The CO₂ concentration was about 280 parts per million (ppm) in 1750. We'll take that as our 'overheating' baseline for now. By the time we started talking climate change in 1965, the CO₂ concentration had already climbed up to 320 ppm: we had a 40-ppm excess. It is the excess CO₂ since 1750 which causes most of our excess heat since 1750, via greenhouse effects.

By 1996, the CO₂ was up to 360 ppm: the excess had doubled. At 400 ppm in 2015, the excess was rising 3 ppm each year. Back in the 1960s, that annual step up was 0.8 ppm.

The excess CO₂ tripled in just fifty years. **Failure is another reason to reconsider our climate strategy.**



Whiplash weather

Climate trouble comes from the temperature contrasts that develop as land heats up twice as fast as the oceans,

and the Arctic heats twice as fast as the land—the very contrasts that the *global average* washes out. The contrasts rearrange the winds, creating floods here and droughts there. Patches of exaggerated overheating have become the big driver of trouble.

The present paradigm borrows only from preventive medicine—omitting the other lessons we teach medical students about evaluating risk when windows of opportunity are closing. The present paradigm always speaks of a future problem, rather like preventing future tooth decay by brushing your teeth today.

But when we already have a tooth abscess or a climate disease, you'd really expect a focus on how to keep those current problems from killing us, not continuing to talk only about prevention. If climate's demolition derby might destroy civilization in the next few decades, **emissions reduction should not be where you direct most of your efforts.**

Emissions reduction has now become what, in medicine, is called an adjuvant, a supplementary treatment that may be ineffective by itself but augments a more effective treatment. The familiar example is chemotherapy, ineffective for larger tumors but, following their surgical removal, often effective against the smaller remnants.

Might this be the time to reframe the climate problem, a paradigm shift that better focuses on what really matters and their closing windows of opportunity?

“Green” solutions that aren't

Recapturing some of the fossil CO₂ in smokestack fumes, burying it in old natural gas wells, is just another emissions reduction scheme called “Carbon Capture,” one that still allows additions to the accumulating blanket of CO₂. I consider it a nonstarter because, to run the extraction process, it takes a lot of power, reducing the power available to the grid. To make up for it, they

must burn additional coal. Per gigawatt available to the grid, the coal companies would sell a lot more coal.

If one instead burns wood with recapture, some of the atmospheric CO₂ earlier captured by photosynthesis is now buried; it would ordinarily return to the air in 50–100 years via bacterial decomposition. But notice the lag time issue: with 30% recapture now, **the proponents would accelerate the addition of the other 70% to our CO₂ blanket.** For the 70%, it's as bad as a forest fire, where recapture takes fifty years. What's carbon neutral in the long run is no longer the issue.

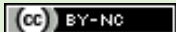
That scheme is also unreliable. Should a famine threaten, food crops will take priority over growing switchgrass and trees. The land and water requirements for growing them also mean that it cannot be scaled up to meet the “big enough” test. All smokestack capture methods are too small, too slow, and too unreliable for the immediate task. **We need Big, Quick, and Reliable.** All three. Now.

It follows that we must remove the excess CO₂ from the air on a large scale if we wish to escape the very serious consequences: not only a series of economic crashes that make lenders reluctant to lend again for fear of not getting their money back, but serious death spirals involving those Four Horsemen.

We now need a new plan for how to get ourselves out of this mess. And we had better get it right this time, not producing just another low-ball understatement of the actions needed, with no safety margin mentioned.

Emissions reduction and sustainability are still important for the post-cleanup world; those too young to vote should focus their efforts there. Others should consider redirecting their efforts to insist on quick climate repairs.

It's OK to print your own.



Series home: Print, and find additional handouts at, WilliamCalvin.org/climate

Reading: [The Great CO₂ Cleanup](#), WilliamCalvin.org

C. H. Greene et al. *Earth's Future*, via

doi.org/10.1002/2016EF000486