State of the Climate – It's Alarming!

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> Stuart Scott of Climate Matters TV, recently interviewed Dr. Peter Wadhams, emeritus professor, Polar Ocean Physics, Cambridge University and author of the acclaimed highly recommended: A Farewell To Ice (Oxford University Press, 2017).

In response to the question "what's your assessment of the state of the climate," Dr. Wadhams replied: "Well, first of all, what I see is an acceleration of global warming because, for instance, the rate of rise of CO2 in the atmosphere is unprecedented. Not only are we not reducing emissions to the point where CO2 is stabilized, but the CO2 level is rising exponentially; it's going faster than its ever gone before… and then there's [sic] the extreme weather events, which certainly have hit people in Europe…."

According to the National Oceanic and Atmospheric Administration ("NOAA") concern about CO2 is decisive: "Today's rate of increase is more than 100 times faster than the increase that occurred when the last ice age ended." One hundred times anything is big.

That is an unprecedented rate of growth with profound and nasty negative consequences for temperature, climate, ecosystems, and species on land and in the oceans, nothing good. In fact, it could unexpectedly turn ugly to an extreme; a dour fact few people want to face. Further to that point, nobody believes the worst case, but that's why society is always blindsided by catastrophes.

Significantly, and extremely important for the optics of climate change, the commencement/start of disastrous climate change happens where nobody lives (nobody sees it), for example, the Arctic, Antarctica, Greenland, Himalayan glaciers (headwaters for major rivers), Andes's glaciers (headwaters for major rivers), the oceans, Patagonia. Nobody lives where climate change is most pronounced and clearly evident. Hence and therefore, it is difficult for people to accept, realize, and deal with the impending danger hidden away from society, until it is too late.

Essentially, the million-dollar question, therefore, is whether this unparalleled occurrence of abnormally rapid CO2 growth, on steroids, triggers tipping points of significant unstoppable catastrophic events that ravage the biosphere. Regrettably, there are no backups; there's only one biosphere!

For sure, paleoclimatic history is filled with examples of horrific consequences. After all, there have already been five major extinction events. We are the sixth; it's just a matter of time.

The first five extinctions: (1) Ordovician 444 million years ago ("mya"), 86% species gone; (2) Devonian 375 mya, 75% species lost; (3) Permian, 251 mya, 96% species lost; (4) Triassic, 200 mya, 80% species lost; (5) Cretaceous, 66 mya, 76% species lost; (6) Today- unknown so far, except for unlucky insects.

Already, extinction-type numbers of 40% to 90% losses have hit insect abundance throughout the world (maybe chemicals at work), which is extremely concerning as insects do well without humans but humans don't survive without insects. This one fact alone is a big-time wakeup call, like Fright

Night on Elm Street.

Still, in light of the unprecedented rapid rate of CO2, as of today, nobody has experienced the likely outcome. Thus, a new era of climate change is commencing with uncertain consequences but horrid telltale signals extend far and wide.

Firstly, it's important to distinguish the significant impact of carbon dioxide (CO2) in the atmosphere as a heat-trapping GHG, as for example, the paleoclimate record of millions of years ago shows CO2 at 400 ppm (parts per million) temps 5° to 10° warmer than today and sea level 75 feet higher than today. Whereas, in stark contrast to that scenario, 20,000 years ago CO2 was at 200 ppm, and sea level was 400 feet lower. It was the last Ice Age, the late Pleistocene Epoch. (Source: NASA)

It wasn't until a decade ago that science first discovered methodologies to effectively look back 20 million years to see the paleoclimate record, as reported in a paper by Aradhna Tripati, UCLA dept. of Earth and Space Sciences: "During the Middle Miocene (the time period approximately 14 to 20 million years ago), carbon dioxide levels were sustained at about 400 parts per million, which is about where we are today. Globally, temperatures were 5 to 10 degrees Fahrenheit warmer, a huge amount." (Source: Stuart Wolpert, Last Time Carbon Dioxide Levels Were This High: 15 Million Years Ago, Scientists Report, UCLA News, Oct. 8, 2009)

Clearly, when CO2 is too high, similar to today at 410 ppm (Mauna Loa data), temps go up followed by rising sea levels. Conversely, when CO2 is too low, everything freezes up.

All of which begs the question of why CO2 at 410 ppm today doesn't bring on sea level rise 75 feet higher, similar to the event in the paleoclimate record. In point of fact, it might do that, in time, but the answer as of today has everything to do with the exponential rate of CO2 growth versus a much slower rate of CO2 growth millennia ago. Today's exponential rapid increase within only 200-years is a flash of geologic time. As such, temps need time to catch up with the rapid rate of CO2 growth. Therefore, a latency effect is at work, which implies an ominous darkness, very dark indeed, hovering over the future.

According to Dr. James Hansen: "The rate of human-made change of atmospheric CO2 amount is now several orders of magnitude greater than slow geological changes." (Source: James E. Hansen, Paleoclimate Implications for Human-Made Climate Change, NASA Goddard Institute for Space Studies and Columbia University Earth Institute, NY, 2011.)

Furthermore, supposing there are lingering doubts about the direct relationship between excessive amounts of atmospheric CO2 and global warming, Venus's atmosphere is 95% CO2; temperature is 872°F, enough to melt lead. Case closed!

Today's temperatures are a function of yesteryear's CO2. Therefore, future temperature rise is haunted by the buildup of today's CO2, as it emits into the atmosphere at ever-increasing rates, now at 3 ppm per annum versus only 1 ppm per annum only 45 years ago. CO2 emissions are "hell-bent for leather" ever since the Great Acceleration post-WWII hit the biosphere like a bolt of lighting, putting human footprint boldly onto nature's course for the first time ever. Nowadays, it's a "human-derived climate," plain and simple.

The negative consequences are far-reaching but start in regions of the planet where nobody lives, nobody sees or hears or senses, for example:

(1) The disappearance of Arctic ice is hugely negative for weather patterns throughout the Northern

Hemisphere (already happening), as well as threatening to kick into gear runaway global warming as methane hydrates frozen over eons gets released, heating up the planet, thus burning off agriculture;
(2) Arctic warming feedback amplifies additional rapid melting of Greenland, which has already "knocked the socks off" climate scientists when its entire surface turning to slush for the first time in geologic history;
(3) The West Antarctic Ice Sheet is starting to disintegrate with three massive ice shelf collapses since 1995, including a trillion ton iceberg, a dangerous tipping point already at hand; as such, Miami Beach raises streets by 2-3 feet.
(4) Coral reefs are collapsing, especially the Great Barrier Reef (one of the Seven Natural Wonders of the World) losing one-half its coral in 2016-17 due to global warming; the reef is home to thousands of species;
(5) Thermohaline (ocean circulation patterns) are slowing, endangering Europe with loss of its remarkably temperate climate.
(6) The release of marine methane hydrates (20-xs more powerful than CO2), especially in the shallow East Siberian Arctic Sea threatens the start of runaway global warming (RGW), whacking global crops; already U.S./Soviet joint expeditions discovered one-half-mile-wide zones of methane bubbling to surface spewing into the atmosphere;
(7) Depletion of ocean oxygen and the most rapid acidification in millennia, threatening the base of the marine food chain;
(8) Back-to-back-to-back (three) serious droughts hit the Amazon rainforest, the planet's lungs, within only a few years; this is unprecedented and extraordinarily dangerous for multiple surrounding ecosystems. Global warming redirects rainfall away.
(9) Northern Hemispheric permafrost melting rampantly and deadly dangerous, as it now competes with human-caused GHG emissions, which was scientifically measured for two years in Alaska. This is an absolute "first" and suggestive of a major tipping point reversing from a massive carbon sink into a massive carbon emitter in competition with human CO2 emissions.

Those samplings of active tipping points have either gone over the edge or close to it. But once amplified over the top, no turning back, hands-free disaster, no more anthropogenic influence required for negative consequences, inevitably leading to big trouble.

Meanwhile, opinions of climate scientists run the gamut from belief that humanity is (a) on death's doorstep, within a decade at most, as the ice-free Arctic exposes massive methane (CH4) stored in ice hydrates, triggering massive global warming, decimating agriculture, upending the planet into a dystopian world of infighting over essential food and water or (b) dangerous tipping points will be deferred well into the current century; so not to worry as human ingenuity will prevail over time or (c) climate deniers totally discount anthropogenic global warming; humanity's fate is in God's hands and/or, in the hands of charlatan politicians, "guiding lights to nowhere" other than dystopia, assuredly guaranteed.

Essentially, nobody accepts, or wants to believe worst case scenarios such as an extinction event, even though early warning signs of impending extinction are wide open for all to see, assuming they look in the right places, but nobody lives where the red warning lights and bells and whistles and loud sirens blare other than an occasional expeditionary scientist, who is belittled, humiliated, and badgered by America's current political ruling class.

The idiom "Nero fiddles as Rome burns" arises anew, with an exclamation point.

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