Apocalypse not

How carbon fuels have greened our planet

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TORONTO — Writing more than two millennia ago, the Greek philosopher Aristotle observed in his treatise Meteorology that around his portion of the Mediterranean basin "sometimes there is much drought or rain, and it prevails over a great and continuous stretch of country," but that "at other times it is local; the surrounding country often getting seasonable or even excessive rains while there is drought in a certain part." Sometimes, too, "all the surrounding country gets little or even no rain while a certain part gets rain in abundance."

The unpredictability of the weather from one growing season to the next was then, as it is now, an unavoidable and often terrifying fact of agricultural life.

Where most saw a problem, some saw opportunities by claiming to be able to predict or influence the weather and to identify human actions that triggered unseasonable heat or cold, excessive or insufficient rainfall, and warming or cooling trends. Over the years, their "climatic scapegoats" ranged from insufficient offering to the gods, witchcraft and deforestation to lightning rods, wireless telegraphy, canon shots in the First World War, nuclear testing and (visible) air pollution.

Nowadays, of course, a large number of climate modelers and activists trace every bad weather event to invisible, odorless and tasteless carbon dioxide produced through the combustion of coal, oil and natural gas.

Present-day Jeremiahs, such as radical environmentalist Bill McKibben, thus warn that our collective failure to reduce the concentration of carbon dioxide in our atmosphere from its present level of 0.0392 percent to below 0.035 percent (or from 392 to 350 parts per million for better rhetorical effect) through drastic actions will result in glaciers disappearing and millions of people dying of thirst; malaria- and dengue-fever-carrying mosquitoes spreading far and wide; longer and more sustained droughts that will make farming impossible in some areas; rising sea levels that will engulf cities, islands and farmlands; more acidic oceans that will wipe out fishes and dissolve coral reefs; and more frequent and devastating hurricanes and blizzards.

Far from resting on established facts, however, the claims trumpeted by McKibben are based

By Pierre Desrochers
For The Drill

on "scenarios" concocted by modelers who can't explain the lack of global warming over the past decade and a half. If one dares to leave the realm of climate conjectures for the world of historical reality, however, the available evidence paradoxically suggests that humanity's ever-greater reliance on carbon fuels has considerably lightened its environmental footprint.

A case in point is the dramatic reforestation of many regions of our planet. For instance, France has seen its forest area expand by one-third between 1830 and 1960, and by a further quarter since 1960. This so-called "forest transition" occurred in the context of a doubling of the French population and a dramatic increase in standards of living. The French gross domestic product per capita multiplied by approximately 18 during this period. Reforestation — or an improvement in the quality of the forest cover in countries such as Japan where it has no room to grow — has similarly occurred in all major temperate and boreal forests and in every country with a per capita GDP now exceeding U.S. $4,600 — roughly equal to that of Chile — and in some developing economies ranging from China and India to Bangladesh and Vietnam.

The burning of carbon fuels created this outcome in many ways, not the least of which is that carbon dioxide emissions are plant food. Yet, this is only part of an underappreciated story.

Despite widespread beliefs to the contrary, perhaps as much as nine-tenths of all deforestation caused by human beings since the emergence of civilization occurred before 1950 as people needed to clear massive amounts of forested land in order to provide themselves with shelter, food, warmth and a multitude of objects.

Unfortunately, in many locations without prime agricultural land, primitive technologies ensured not only that at least 40 acres and a mule were required to (poorly) sustain a household, but also that much environmental damage was done in the process.

As another Greek philosopher, Plato, also observed more than two millennia ago, Athens' hinterland had once been "covered with soil," the plains "full of rich earth," and the mountains displaying an "abundance of wood," but in his time many mountains could "only afford sustenance to bees" while, as in small islands, all the "richer and softer parts of the soil (had) fallen away, and the mere skeleton of the land (was) being left."

Complaints similar to Plato's were common throughout the ages until technological advances ushered in the age of carbon fuels over two centuries ago. Among other environmental benefits, coal and later heavy oil and natural gas displaced firewood and charcoal. Gasoline and diesel engines eliminated the need for millions of horses and mules — and their feed and bedding requirements — in both farms and cities.

Synthetic products made out of coal, and later oil and natural gas, made redundant the cultivation of plants such as rubber and cinchona trees — the latter being at one point in time the only known cure to malaria — indigo and madder, which are the key inputs in the production of blue and red dye, and flax for ropes and cloth, while drastically reducing the amount of land devoted to the production of cotton and wool and reducing pressures on wildlife, from whales to furry animals.

Through their role as long-distance land and maritime transportation fuels, coal and later petroleum-based fuels — mostly diesel and marine bunker fuel — encouraged agricultural specialization in the most productive zones of the planet.

Coal, natural gas and petroleum were also indispensable to the extraction, production, transportation and spray of a vast array of agricultural inputs — from irrigation water and fertilizers to pesticides and greenhouses — that drastically increased yields while curtailing losses to pests and diseases.

The scale and scope of modern transportation technologies also made it possible to drastically increase the size of our cities and to concentrate more people on small amounts of land.

Because space is at a premium in urban areas, city residents drive, pollute, consume and throw away much less than people living in less dense surroundings. In the words of economist Ed Glaeser, "Residing in a forest might seem to be a good way of showing one's love of nature, but living in a concrete jungle is actually far more ecologically friendly. … If you love nature, stay away from it."

To put things in perspective, cities, suburbs, roads and highways cover perhaps less than 5 percent of the land area of the lower 48 American states. Worldwide, cities occupy approximately 2 percent of Earth's surface, an area expected to double to 4 percent in the next half-century.

For several decades in the United States and roughly half of the world, far more agricultural land has been reverting to wilderness than has been converted to suburbia. The unsung heroes of this greening of our planet have been the much maligned carbon fuels, whose use affect other plant and animal species considerably less than the "renewable" but much more land-hungry and less-efficient alternatives promoted by so-called environmentalists.

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