## A CLIMATE PIG WITH LIPSTICK

Global cooling, global warming and climate change. A pig with lipstick. I like many before me, were forced to write a final science examine for the eighth grade. Much to the surprise of my teachers and peers, my passing grade was 92%. Wow, what did I learn?

Well, I learned a teaspoon of baking soda plunked into a beaker of vinegar goes Poof! I learned that frogs move, even when dead. I learned that certain flowers can reproduce by themselves (still struggling with that one) and I learned the Earth has experienced at least five major Ice Ages.

## Ice Ages

The Ice ages. What a term. Two nouns that describe mile high chunks of ice sitting on top of Phoenix Arizona. Or a 3,000-mile glacier running right through Wichita Kansas with frozen lakes and rivers in Miami, Los Angeles, and Atlanta. But what causes an Ice Age?

The main cause of ice ages is the Milankovitch cycle. That cycle refers to a shift in the Earth's orbital tilt, which changes the angle at which the Sun's rays hit the Earth. That tilt is huge, and our Ice Ages prove it.

During an Ice Age, the Earth alternates between 100,000 years of cooling followed by 90,000 years of warming. The cooling phase is called the glacial period. The warming phase is called the interglacial period. Today, the Earth is in the middle of an interglacial warming period. A period where the earth's temperature increases.

In each of the past five Ice Ages, the interglacial periods really warmed up the Earth. So warm that trees grew in both the Arctic and Antarctic, and alligators lived in Ellesmere Island, a mere 500 miles from the North pole!

## **Global Warming and its Cause**

The theory of Global Warming aligns perfectly with the Milankovitch interglacial cycle which is the warming phase the Earth is now in. Based on the last five Ice Ages, we are halfway through that warming cycle. A cycle where the Earth's temperature rises, and where theory and fact's part.

The first of the five Ice Ages occurred over a billion years ago. The last started two million years ago which we are halfway through its 90,000-year interglacial warming cycle. Yup, we have 45,000 years of warming still to go before we start cooling again!

Our current interglacial warming cycle started 45,000 years ago. Way, way before fossil fuels, before the combustion engine and before man made CO2. Fossil fuels and combustion engines do not create and did not create the interglacial warming cycles. The tilting of the Earth's axis did. These are facts.

So, what else did I learn from that eighth-grade science? I learned how to connect two dots together by cognitive thought. We know fossil fuels and combustion engines never existed during any of the Ice Ages. So, we can eliminate both of those factors as a cause for global warming. But what about CO2?

Well, the easiest way to understand what CO2 is, is to look at the air we breathe. Carbon dioxide constitutes *four one-hundredths of one percent* of the air we breathe (or 400 parts per million). That is an <u>extremely tiny</u> fraction of the atmosphere when you consider the other parts. Nitrogen (78%), oxygen (21%) with the remaining 1% consisting of argon, CO2, methane, nitrous oxide and water vapor.

How can such a small magnitude of CO2 be dooming humanity? How can we be absolutely, positively certain that if CO2 continues to increase, it will be lights out for life on Earth? Two excellent questions, so let's look at facts.

During the warmup of the Cambrian period 500 million years ago, the Earths reached an average temperature was about 90 f. At its height, CO2 constituted over 5,000 parts per million of the Earth's atmosphere. Then, 150 million years ago, during the Cretaceous period and nearing the end of the last thaw and the start of the warming cycle, CO2 was 1,700 parts per million, more than four times what it is now. Life thrived during those periods. So, how can 400 parts per million be a threat to our existence? History tells us it can't. That's a fact.

Before humans started burning fossil fuels about 200,000 years ago, CO2 made up 250 parts per million of our atmosphere. It has been growing at about *one part per million per year* for the past 50,000 years. In other words, a *very* small magnitude is growing at a *very* slow rate. And that will continue to increase until we reach the apex and then ... start our cooling towards the Earth's sixth Ice Age.

So factually, todays CO2 of 0.04% or 400ppm of the atmosphere is a lot smaller than the 1,700ppm that peaked during the prior Ice Age. So here is another fact. Plants die when the air CO2 level drops below 135ppm and thrives in commercial greenhouses pumping CO2 at 2,000 ppm. Huh?

Did you know the Earth provides natural CO2 filters? All day long, mature trees absorb CO2 and expel oxygen each night. Mature trees absorb 48 pounds of CO2 and expels 260 pounds of oxygen each year, *for each tree*. There are three trillion trees on earth that <u>can convert</u> 7.8 trillion tons of CO2 each year. Today, man creates 4.2 trillion tons. So .... that means CO2 output must increase by 48% (almost half more), over the next 45,000 years before it would affect Mother Nature's Earth.

The Earth also provides a second natural CO filter. The oceans contain 50 times more CO2 than the atmosphere. When the oceans heat up (sun), they release CO2 and when the oceans cool, they absorb CO2. So, when the oceans expel CO2, the trees absorb and convert it to oxygen, which we require to survive.

The eight grade and beyond taught me how to reason, extrapolate and connect dots using facts and science. No, the Earth is not flat. No, the moon is not made of cheese and

yes, we are in a global warming. A warming phase caused by the tilting of the Earth axis, not by man, not by fossil fuels, not by the combustion engine and surely not a CO2 footprint.

So, let's take the lip stick off Mother Nature and put it where it belongs. The Pig.

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