

Freedom Matters

A Weekly Newsletter

Dane County, Wisconsin

Vol. 3, No. 17

Friday, April 25, 2002

We are a free people in a republic, under a constitution which limits the powers of government to those necessary to secure the unalienable rights of each person to their life, liberty and property. Yet, when a legislature is in session, no one's life, liberty or property is safe. It's the curse of a democracy. That's why we have a republic instead. *Freedom Matters* dedicates itself to the fight to restore our republic. Most of the press and courts fail to do so. They've forgotten that freedom matters.

Sustainable Development Is Unsustainable. Part 4. Are The Neo-Malthusians Right?

by Bob Bowman

Let us return to the doomsday prediction in *The Limits to Growth*, and in its follow-up, *The Limits to Growth, II*. Are we exhausting the resources of the earth, so that sometime in this 21st century, our industrial civilization will collapse?

As Beckerman indicates, this question implies that resources are finite "in some meaningful sense," for all resources are finite. So, what is "meaningful?" Consider the sun, which burns hydrogen for fuel. Its supply of hydrogen is finite; when the sun burns up all its hydrogen, it will next burn its way through its secondary fuels, in a much shorter time, then collapse. Of course, the time line for this is in the billions of years. Still, long before the sun runs out of hydrogen, life will be gone from the earth. As the sun ages, data say that its type of star burns hotter and hotter. In a billion years or so, the sun's heat output will scorch the earth, and all life on it. That's global warming beyond our control. So, as the bible says, the earth will be destroyed by fire.

Thus, in the long run, the earth as a haven for life is **not sustainable**. Moreover, long before the oceans boil off the earth, we, *homo sapiens*, may already be gone, extinct or replaced by other species. Therefore, in predicting resource utilization by humans, how long a time line is meaningful? The answer to that, in *The Limits to Growth*, was to cut off the computer printout at 100 years of run time (corresponding to the year 2070), because at that time, the model predicted resource exhaustion even if we halted all further *increases* in our use of resources.

To the 1970s readers of *The Limits to Growth*, that was a doomsday prediction. As a test of this prediction, Beckerman reviews studies done from time to time that predicted we would run out of resources. He presents a table of major industrial metals, their known reserves in 1970, amount consumed from 1970 to mid-1999, and their known reserves in 1999, **all in millions of metric tons**, and it shows we are not running out:

Metal	1970 Reserves	Amount used, 1970-1999	1999 Reserves
aluminum	1170	430	34000
copper	308	650	290
lead	91	140	150
nickel	67	140	22
zinc	123	430	190

Time after time, for mineral after mineral, "known reserves" predicted exhaustion, scarcity and high prices. Economist Julian Simon disagreed. He bet a Neo-Malthusian, Paul Ehrlich, that despite increasing use, minerals would remain so plentiful, they would become cheaper. Simon won the bet, hands down.

Beckerman points out that "known reserves" is a market-driven estimate. Only as we exhaust known reserves does it become profitable to hunt for more, or to devise new technologies that make it profitable to mine more difficult deposits, thereby now including them in the reserves, etc.. Thus, assessments based on "known reserves" have repeatedly and grossly underestimated the resources.

For minerals, and even for fuels (the latter to be discussed later), Beckerman argues that we will never run out of any of these resources, nor will there ever be such a sudden reduction in their supply as to cause serious problems. He argues that if production begins to decline, the increasing scarcity will begin to drive up the price, at which the market responds by either finding more reserves, or by inventing new technologies that allow the mining of previously uneconomic deposits, or by finding substitute resources that can be used instead, or by finding other ways to do without the declining resource.

In a word, Malthusian and neo-Malthusian theory has been much too simplistic. For one, it has relied on faulty data regarding resources, as noted above. For another, it has relied on extrapolation, which is to say, it goes beyond the available data. Any time we extrapolate, we risk being wrong, particularly if the extrapolation hits a "limit." Finally, the theory has taken account of only two factors: **amount of population increase** and **amount of resource used up**. It fails to account for other factors known to exist, such as the decline of birth rate to below replacement level in the industrial nations of the world, and the ability of human creativity and technology to compensate as resources become more expensive. That is, the theory was not dynamic (did not adapt), whereas the real world does adapt.

More, next issue.

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