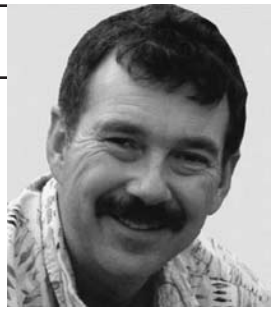


There's No Relation Between CO_2 and Climate Change

Timothy Patterson, Ph.D., is a Carleton University professor of geology and director of the Ottawa-Carleton Geo-Science Center in Ottawa, Canada, and a chief collaborator with Martin Durkin in the 2007 documentary for Britain's independent Channel 4 TV, "The Great Global Warming Swindle." He describes himself as "half a biologist, half a geologist, sort of in between. But luckily a biologist with a long view, looking at deep time, which is what you need if you're looking at this problem." Gregory Murphy interviewed him on Dec. 28, 2007. Their discussion has been abridged for publication.

EIR: We are interested in interviewing people like yourself who have done research, and who may at one time thought that CO_2 drove climate, but found that this was not the case.

Patterson: Well, to be truthful, I didn't think about it all that much, because it's not really what my research was about; I worked on paleo-oceanographic projects.

How it all started was, I got a pretty large grant from the Natural Sciences and Engineering Research Council of Canada. The reason I got this grant, was that British Columbia hasn't been settled all that long, like lots of places in North America, and there are major fisheries out there—not just salmon that you always hear about from the West Coast, but they had anchovy fisheries, sardine fisheries, herring fisheries, and so on. But their problem was that periodically, these fisheries would just crash. They'd have a great fleet one year, going after these fish, and the next year, nothing! And so, fisheries managers were pulling their hair out; but the problem was, their records were very, very short, so they had *nothing* to go on. They just didn't really understand what was going on with the system.

So I got this funding, to go in and try to assess fish records over thousands of years, because the sort of research I was doing means I can track that. We knew that there were certain inlets in the West Coast that didn't have any oxygen in them, so that various sorts of fish remains, like their scales, would be very, very well preserved. Our idea was to look at very high resolution, to see if there was any pattern with the fish, to see if we could figure out what was going on.

We started to do that in 1998. We looked at the fish records, and the microfossils, and the sediments themselves—they were beautiful sediments. What goes on in these inlets, is that basically there's no oxygen; anything that falls into these inlets, just stays there, preserved. The Aleutian Low dominates climate in the Wintertime, and results in a lot of rain, and you end up with a lot of sloughing off of material into inlets, and that forms a dark layer; and then in the Summertime, there's upwelling going on, which is related to the North Pacific High at this time of year, and you get sink layers and phytoplankton, and so on. The fish like that, and so you get a layer of these things. So you get a light layer and a dark layer.

And so, we were able to go in and get something like a 6,000-year record of these laminated sediments, year- in, year-out. And when you start to pull the cores out, after you X-ray them, right away you see patterns: Some years are thick; you can see it's a great year for upwelling, because the light layer will be thicker, and then other years the dark layers will thicker.

And so, we deployed computers that would go in, and we X-rayed the samples, and then we scanned them, and we began to pull patterns out, using "time-series analysis," various sorts of techniques. And we started to look at the fish records with very high resolution, which resolves phytoplankton and everything else there. [**Figures 1 and 2**]

The Impact of Sunspot Cycles

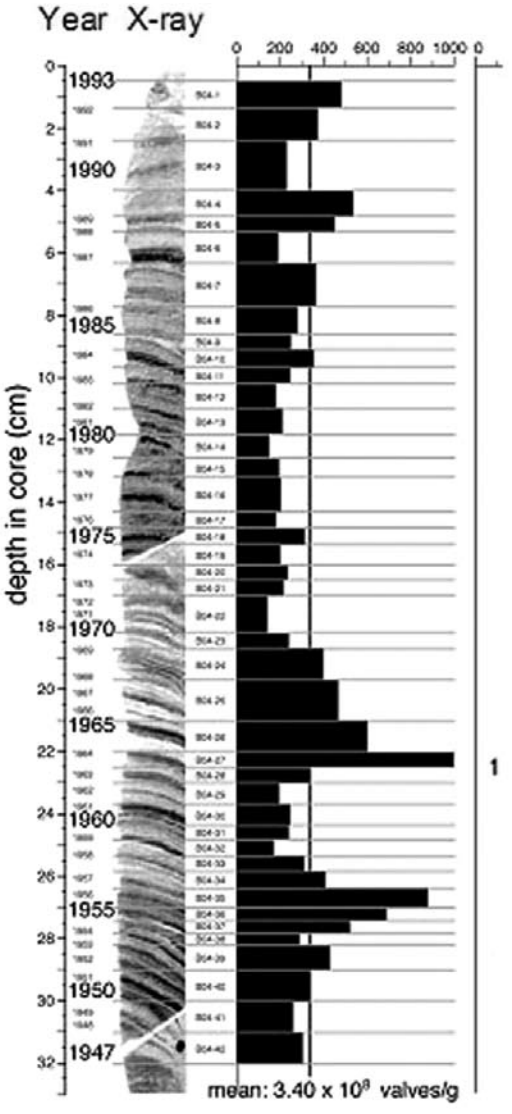
The interesting thing that was starting to pop out for us, was that we began to see sunspot cycles. There are different "flavors" of sunspot cycles: There are the 11-year sunspot cycles, and the 88-year sunspot cycles, and the 200-year cycles, called the Gleissberg Cycle. And we were also recognizing, that no one big climate event was popping up. That was kind of causing us to pull our hair out, because, looking at the literature, there is a correlation between sunspots and climate, but no one had a driver for it, because there's not enough energy across the sunspot cycle.

But luckily, as a lot of this work was coming to fruition, Jan Veizer from Ottawa and Nir Shaviv from Israel published their paper.[1] Since Jan Veizer's right here in Ottawa, I went to a couple of talks that he was giving, and the light bulbs began to go off. He explained about cosmic ray amplifiers and so on, and how that could amplify the solar effect, with the clouds and so on. And that gave us our amplifier.

And so, I began to look more closely at it, and our model

1. N. Shaviv and J. Veizer, "Celestial driver of Phanerozoic climate?" *GSA Today*, July 2003.

FIGURE 1
Diatom Concentration
(millions of valves/g)



Source: R.T. Patterson, A. Prokoph , C. Wright, A.S. Chang, R.E. Thomson, D.M. Ware, "Holocene Solar Variability and Pelagic Fish Productivity in the NE Pacific," *Palaeontologia Electronica*, Vol. 6, No. 1, 2004.

The dark layers are formed in cold, rainy weather, when mud falls into the basin; the light layers are formed in the Summer, when there is greater upwelling of nutrients from the sea floor, and hence a greater growth of the diatom population.

is much, much more mature now—we've looked at more inlets, we've got more data—and we know now that on the West Coast, it's this combination of the clouds that Jan Veizer and Svensmark and some of these people talk about; but there's also an impact, across the sunspot cycle, of changes in UV radiation at low latitudes: There's something like a 0.4% variation. And that has an impact upon the jet stream; the jet stream is like a rope that whips around the world, and causes the movement of the North Pacific High and the Aleutian Low. And they move according to the 11-year sunspot cycle as well—move north and south, east and west. And, that movement controls the upwelling and the winds and so on in the region, and that is what impacts the upwelling and the rainfall and so on in my inlets. That's what I see.

It's a perfect match! And it's not just the inlets we started on, in the southwestern part of British Columbia, but the ones in the north now, show the same sorts of patterns.

It's been very exciting to see this sort of thing. This is how I got really interested in looking at the sunspots, because the impact upon climate in the West Coast is very, very clear, and it shows in our records, right up to the present time.

So, at that point you have to say, "Well, it's not really my area of research," but you start to think about carbon dioxide. And this is again due very heavily to Jan Veizer at the University of Ottawa. He won a top science award from Germany in the 1990s, and he got something like $2 million that he could spend any way he wanted to. So he wanted to look at the record of carbon dioxide through all the phanerozoic, at very, very high resolution. And this is where the work he did with Shaviv came in, and they found that *there was no statistical correlation between CO_2 and climate*.

And in my research, I didn't really see any CO_2 impact at all; there was nothing changing in more recent times that didn't correlate well with the sunspot cycle. So, that's how I got where I am.

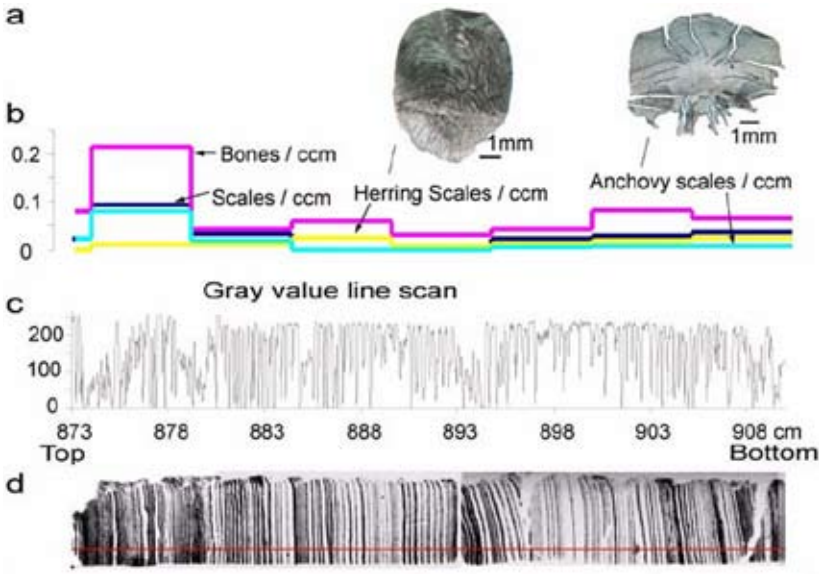
Paradoxes Ignored by Al Gore

EIR: When you testified at the Commons Committee on Environment and Sustainability [in Canada in 2005], you pointed out the real paradox in geological time, is that CO_2 hasn't driven climate at all.

Patterson: Yes, it doesn't correlate, on any scale that you want to look at. Again, that's not my research; that was based on a literature survey. It's very, very clear, when you go through any of the literature—not just looking at Veizer's, but any of the research that's done on carbon dioxide—there's not a good correlation. And the ice core records that Al Gore shows up in his "An Inconvenient Truth," he misconstrues, in that, *the CO_2 lags behind the temperature*—that's just objective! That's just what is reported in the literature. To claim otherwise, is ridiculous.

And what sort of gets me, is that when people can see this sort of data out there, why would they think that today, carbon dioxide would behave any differently than it did in the geologic past? Which is 99.999% of the time? When carbon dioxide has been up to 16 times higher than it is at the present time, the temperatures—the Earth was once, in the Ordovician, in an ice age! And through most of geologic time, except for in the Permian, the CO_2 levels have always been much, much higher than the present time. So, there's just really no correlation between climate and carbon dioxide.

FIGURE 2
Fish Scales and Bones From Core Sample



Source: Patterson et al., op cit.

Herring (light bands) thrive during the Summer, when there is greater upwelling of nutrients, and the diatoms that they eat are plentiful; anchovies (dark bands) prefer colder, rainier weather, when there is more mud at the sea bottom.

That's basically what I testified, and I showed them some graphs and so on, and everybody nodded appreciatively. And we all had a little bowl of soup after—they serve nice lunches at these Commons hearings—and chatted about it, and everybody said platitudes about that wasn't going to change anything, so thanks for coming, and that was it!

EIR: What you said at the Commons hearing really highlighted the paradox, that 450 million years ago, CO_2 was 10 times higher—

Patterson: More like 16 times higher, which is way higher! But anyway, no matter whether it was 10 or 16, it was an ice age, and so that's some of the paradox. But again, as you move on up into the glacial—you know, we're an icehouse world right now. CO_2 levels are low for a reason, and they are low, geologically speaking, mainly because we have hardly any time to warm up between glacials. The way it runs right now, you get about a 15,000-year interglacial, which we're in right now, we're near the end of it, and then you go into about 100,000 years of glaciation. And the problem with that is, a lot of CO_2 gets sequestered in the oceans, and it gets very cold, and the CO_2 doesn't—it just gets sequestered in these oceans, and then when it warms up again, it really doesn't start to come out again until it's time to go back into the next ice age! So, just in the last couple million years, CO_2 levels have been really, really low for just that reason: It's cold most of the time, and because the oceans are deep and wide, and they sequester an enormous amount of carbon dioxide.

Why would you say that a correlation in temperature and CO_2 has occurred since the late 1980s, why would you throw out the correlation with the solar cycles, which match not only now, since the 1980s, but all the way back through the records that we have? I think it's a very, very clear case.

I just can't see how people who have jumped on this bandwagon have stayed there! Because from a geological perspective, there's really no reason for them to be there. Maybe that's why, in the geological community, you don't have nearly the same majority of people claiming that human-generated carbon dioxide is driving climate, because we look at a longer record. And if you go to geological meetings, it's a much more interesting debate, because I think the majority of the people are on my side. It's funny how this whole debate has been hijacked, I think by biologists and geographers.

Models, and Our Understanding of Climate

EIR: You said that you got started looking at this, by looking at the effects on fisheries. A lot of the work that was done on studying the Pacific Decadal Oscillation had to do with the salmon fisheries.

Patterson: Yes. And the funny thing was, it shows how little we understand about the climate system. They didn't even recognize the Pacific Decadal Oscillation until 1996. And now, that's recognized to be a key component of what drives this 22-year drought cycle, in the experience in the western part of North America, and it sometimes reaches even farther afield. Some people are suggesting that is closely linked to sunspot cycles as well.

So, there's all kinds of interesting work. And what I find, and I tell my students often: You think we know everything about climate, but here we are understanding major, major parts of the climate system that nobody even recognized until the late 1990s! And we're still discovering lots of things. So the claims that we understand everything, and that the models are perfect and so on, are just ridiculous. (I'm not a great model fan, either!)

EIR: I can see that.

There tends to be a commonality within the geological community, too. They tend to use computers for doing the studies, like breaking down core samples, and showing the layers and how you do time series analysis off that—yes. I interviewed Nils-Axel Mörner,[2] and he told me, they don't un-

2. *EIR*, June 22, 2007.

derstand sea level rise, because they sit there—a bunch of meteorologists sit around their computers, playing games, and they don't go out and actually muck around and look at things. He identified people who actually do the physical research, as tending to be more on the skeptical side on this whole climate change issue.

Patterson: I would think that's entirely true. And the modelling community, they're very smart with math and so on. But I think, at this stage of the game, trying to use these things as predictive tools is very difficult. Mainly because there are major, major parts of the climate system that we just don't quite understand yet. And the models have to be so complex, that basically, I think some of the huge ones spiral out of control, that there are things going on within the models that fall outside all bounds of scientific understanding. And no one who puts these models, understands how they work.

They don't deal with clouds, for example. And so, if you like this galactic-cosmic-ray-driving climate idea, that basically they're causing changes in clouds and that's the amplifier, well, here you have models that can't really even deal with clouds! And the issue, too, of not being able to reproduce climate over the last 60 years, they basically can't reproduce what's happened! So, you're supposed to use that as a predictive tool? I find that that's a real problem.

They're great tools, I think, for understanding a process, if you could look at some little part of it; but the work that's been done, using them as a predictive tool, I think is ridiculous.

I even saw that William Ruddiman wrote a textbook a couple years ago—he's at the University of Virginia, a carbon dioxide guy, who came out with a silly paper a couple of years ago that suggested that early Indians and early Western Europeans lighting campfires, was what staved off the next ice age.[3] He basically made a claim that because the population was growing—it would still be pretty small, several thousand years ago—that they would clear woods, and light fires, and so on, and that basically that's why we aren't in an ice age, because of the carbon dioxide released from the burning of wood. (See box.) I just thought, "One good forest fire in a dry year would probably add up to everything these people would do altogether."

Anyway, he wrote this textbook, and he said, basically, here's the way the process works: The geologists collect data, and then they provide some interpretation, and the modelers take the data, and they run the model. But if the model doesn't correspond to the geology for which it was supposed to be a predictive tool, if it couldn't reproduce it, then perhaps the geologist had collected the data wrong! I was reviewing this textbook, and I made the guy take it out, because it was the silliest statement that was ever made. That basically, if you have real physical data, and someone does a model of it to predict the future, and the model doesn't correspond to the actual collected data, *then there's a problem with the actual collected data!* It's not the data you throw out, it's the model.

This is the sort of mindset that's in that community. And so, again, they're mathematicians, these people, they're not regular guys, that go around and get their hands dirty.

But the funny thing is, it's the IPCC [Intergovernmental Panel on Climate Change], and every time they come out with these sorts of model projections, that's what they jump on. If you watch the news: "Here's a new model out—this is what it says, it's gonna be even worse than it was before"—and that's what the media reports, and it's just fantasies.

And you know how it all got started: In 1988, [James] Hansen [NASA climatologist and propagandist for anthropogenic global warming] came out with his model, which predicted, what was it?—a 10° Celsius increase in the next 50 years or so? It was like the super-computer equivalent of a Nintendo 64 or something; it was ridiculous! His model was so simplistic, it would be a *joke* today! The grid sizes were huge! Who could put any credence in it? But everybody jumped on it, and they said, "This is it, this is it!"

EIR: Did you hear the story about the stagecraft when Al Gore called Hansen to testify to the Senate? Gore, when he was a Senator, brought Hansen to the Senate to testify. It was hot weather, and they turned the air conditioning off in the room, opened the windows, let the hot air in; Hansen is sweating, and he's wiping the sweat off his brow, as he's saying that it's going to rise 10°C in the next 50 years—

Patterson: So you think it's hot in here now, just wait till then!

I think parliamentarians and congressmen should be all told that story, and learn a bit of humility around here.

I was reading somewhere, suggestions that this is sort of a Baby-Boomer thing, too, that you have control over everything: The Baby Boomers never age, the Baby Boomers never do this, that, and the other thing. So, the Baby Boomers can control the climate. I think it's ridiculous: How can you possibly legislate that "Climate shall not change 2°C"?

And when I teach my climate class to 500 students next semester, that's the first thing I'll talk about, on Day 1, is that the only constant about climate is change. Because the general public, for the most part, has no inkling that climate has ever been really much different from now. They basically think this is the way the world has been forever!

The Next Solar Cycle

EIR: You talk about how the next solar cycle, cycle 25, or after cycle 24, is supposed to be very, very weak. Some of the solar people I talked to are saying that some of this temperature drop will start a little sooner than you're saying, but around the same time frame.

Patterson: Yes, I just read that the first inkling of a sunspot of this cycle may have appeared—no sunspot yet, but there was a magnetic reversal the other day. I haven't fol-

3. William F. Ruddiman, "The Anthropogenic Greenhouse Era Began Thousands of Years Ago," *Climatic Change*, Vol. 61, No. 3, December 2003.

lowed up on that closely, but it's quite interesting, that we've been sitting around with nothing. I guess that every day it gets delayed, shortens it a little bit, and it will make the cycle a bit weaker. So it's going to be interesting to see what happens as we get through this supposedly "big one," and then on to the smaller one after that.

But from a strategic point of view, from this country's point of view—because there's a very good match-up between climate and these solar cycles—if the pattern holds, the last time that there was a cycle that was like what cycle 25 is supposedly going to be like, was during the Dalton Minimum. And during that time, a lot of wheat agriculture was affected. As you know, the Canadian breadbasket is an enormous producer of wheat—in Saskatchewan alone, I think it's something like 22 million bushels of grain every year. You look at what the impact might be, not only of a delayed harvest, but also early frost, and lower temperatures out there, which influences how the wheat heads. I was talking to somebody who suggested that wheat production could fall from 22 million bushels down to 10 million bushels, if you had like a 1-2°C drop in temperature in that region. Agriculture will be very, very seriously curtailed out there.

So from a strategic point of view, that's bad news! And North America is a relatively small continent; you think of Eurasia, which has vast areas that are in grain production—if it's bad here, it's magnified when you get to those places. So, there could be very, very serious agricultural issues when we arrive at the 20-teens.

EIR: I've talked to guys who actually believe that an increase in CO_2 will actually be beneficial to agriculture. If you look at an increase in CO_2, in, say, an area that has more drought conditions, like in Australia, the wheat down would actually benefit from a higher CO_2, because they would use less water, and they wouldn't be so water-stressed.

Patterson: That's right, but I refer to it from the Canadian perspective, where basically it's a frost issue in the West. And so, if the seasons are shorter and it's not very warm, the CO_2 fertilization certainly is going to help some, but it's not going to offset things all that much. Maybe in parts of the U.S.—okay, the U.S. has great climate variation, all the way from like what it would be in Saskatchewan, in northern North Dakota and so on, right down to places where they'd love it probably a little bit cooler! So, it would probably be better production for them.…

The Challenge for Scientists

I think that the biggest problem, is that there's a *real* lack of communication amongst the various sorts of disciplines and sub-disciplines. I wasn't kidding when I said, you go to the earth science community, and you'll find that the overall consensus in our community is much different than you'd see in the biological community, and for some reason, we don't speak out too much, in the earth science community. And so, I think that people don't quite appreciate that scientists in this community are not quite as excited about the global warming doom, as some of the other community, like the modelers, who are able to somehow get their point across much more effectively. And my hat's off to them, in that regard, I guess. Because we've been failures in the earth science community. Maybe we wouldn't have been in this mess, if we'd been more vocal earlier on.

Malthusian Claims Pandemic Disease Will Stop Warming

William F. Ruddiman of the University of Virginia argues that man-made global warming began thousands of years ago, as a result of the production of CO_2 caused by the discovery of agriculture and subsequent technological innovations in the practice of farming ("The Anthropogenic Greenhouse Era Began Thousands of Years Ago," *Climatic Change*, December 2003). He claims that the other main source of CO_2 was the cutting of forests and burning of wood and peat to heat homes in Eurasia and North America, which he maintains is why glaciers didn't advance farther south from the Arctic, as they did in previous glacial advances. Ruddiman bases this bizarre hypothesis on fraudulent ice core data and computer modeling of the extent of deforestation in Europe and North America over the past 8,000 years.

Ruddiman is a neo-malthusian and a follower of "population bomb" hoaxster Paul Ehrlich (see "Where the Global Warming Hoax Was Born," *EIR*, June 8, 2007). Ruddiman repeatedly asserts that man created climate problems by developing new technologies which caused a slight rise in CO_2. (The amount of emissions was barely above the level of natural variation from outgassing from the oceans.)

One might laugh at the notion that early Europeans burning wood staved off the worst effects of the last ice age—which was the response among most scientists to Ruddiman's paper. But his more important point is more blood-curdling: that pandemic diseases such as the Black Death of the 14th Century cause a decrease in CO_2 and a decrease in temperature. In other words, such diseases will reduce the population, thereby creating a cooler world.

—Gregory Murphy