

# The Petition: A Global Warming Case Study

by

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“Sign it, Mike!” Professor Dan Carlson’s suggestion was unequivocal. “So it’s overstated, maybe a little extreme. So what? Sign the petition or crumple it up and throw it out. Either way, let’s get back to work!” Dan had little time or patience for paperwork.

“It is not just an exaggerated statement. There are ethical concerns,” geophysicist Michael King responded. The meeting was not going as he expected. He had hoped to rally the other faculty members of the Geology Department against an organization named the **Petition Project**. Yet, after only five minutes of this special staff meeting, his hopes were rapidly fading.



Dan spoke again. “You know that 11,000 years ago a glacier covered North America. That icesheet is gone because Earth warmed up without any influence from mankind or our industries. Cooling and warming cycles have occurred repeatedly over Earth’s history. There is paleoclimatological evidence that suggests variations in Earth’s spin axis and orbital shape drive climatic oscillations or it may be directly related to solar output. But now, because the environmentalists have cast Nature and Mother Earth as victims, the blame falls to the ‘evil humans.’ Well, that thinking is misguided at best. It is not science. It’s political correctness.”

“Nevertheless,” Toni Daniels was not one to keep quiet when a good argument presented itself, “a global warming trend is emerging that can’t be dismissed out of hand! Until recently, it was questionable that temperatures have risen significantly over the past century. It looked like clouds and aerosols were offsetting any atmospheric warming generated by greenhouse gases. But the evidence is mounting and is already quite convincing. An ongoing project in the Arctic, named Ice Station Sheba, has found the pack ice is thinning rapidly. It is 100 miles further north than expected and is only 7 feet thick. That is 3 feet less than expected. These findings are supported by measurements of reduced salinity in the upper strata of the Arctic Ocean. If that isn’t enough, now the weather service says this is the warmest year on record. And a recent tree ring study indicates this is the warmest decade in 600 years. Also, there are indications that heat-driven weather phenomena, such as cyclonic storms and El Nino episodes, are escalating in frequency and intensity. These signs of climatic change correlate well with the 25% rise in atmospheric CO<sub>2</sub> levels above the pre-Industrial age value. So, regardless of the root cause, it is likely greenhouse gases play a role in global warming.”

There was a momentary pause as Dan and those that sided with him tried to think of a strong counter-argument. Michael took the opportunity to restate his problem. “Look, there is more to this than who is right and who is wrong about global warming. In front of you are copies of the letter and petition I received yesterday morning. The project is an effort to convince Congress to reject the United Nations-backed Kyoto Treaty. If ratified, the treaty would limit the use of fossil fuels, such as coal and oil, by approximately one-third of the 1990 levels by the year 2012. The projected result is a drop of 10% or

less in greenhouse gas emissions, particularly carbon dioxide (CO<sub>2</sub>), by industrialized nations. Listen to this excerpt from the cover letter which was signed by a past president of the National Academy of Sciences:

This treaty is, in our opinion, based upon flawed ideas. Research data on climate change do not show that human use of hydrocarbons is harmful.

“Sounds reasonable, doesn’t it? In fact, it echoes my thoughts on the matter. Now listen to the actual petition.”

The proposed limits on greenhouse gases would harm the environment, hinder the advance of science and technology, and damage the health and welfare of mankind.

“There’s the problem. It is not opposition to the Kyoto Treaty. It is the premise on which that opposition is based. I find it hard to believe this petition is being circulated by professional scientists. This kind of melodramatic absoluteness sounds like the language of a would-be religious prophet.”

Michael continued, “If that were the end of it, maybe it would be better to ignore the petition rather than draw attention to it. However, it gets worse. Again, in the stacks in front of you, you’ll find copies of an *unpublished* professional paper. The authors are from the Oregon Institute of Science and Medicine (OISM) and the George C. Marshall Institute. However, the format is an exact duplicate of that used by the *Proceedings of National Academy of Sciences*. The apparent intent is to make the paper appear as though it has been through the peer-review process. In my mind, the overstated case—coupled with the misrepresented paper—is outright fraud! What really disturbs me are the Internet websites for the Marshall Institute and for OISM. Both sites present a biased perspective on global warming and the OISM page contains a list of several thousand supporters’ names. Among them are some of the country’s top scientists. I believe the scenario has been engineered to convince Congress and the public that the sponsor’s position represents a consensus of the scientific community.”

“Well, it seems perfectly reasonable to me,” said paleontologist Robert Peters. “I intend to support it.” As the senior member of the department, Peters’ opinion carried considerable weight. “In fact, I think the department should support it.” Michael’s arguments seemed to be falling on deaf ears though, by this time, he was no longer surprised.

“Maybe there are ethics issues,” Peters continued, “but maybe a little white lie or two is just what we need. The public has been brainwashed into believing that anything on the evening news is truth. The media has been pushing global warming for its sensationalistic value. All the dire predictions are emphasized, while the arguments against global warming are ignored. It is never mentioned that global temperatures were higher in medieval times when grapes were growing in Scotland and the Vikings inhabited Greenland. Civilization wasn’t destroyed then and the coastal lands were not inundated. I think we owe it to the public to set the record straight. If that means fighting fire with fire, then so be it.”

“Isn’t it our responsibility as scientists to present a balanced picture of the facts as we understand them?” Michael countered. “Grand standing and extreme advocacy are hallmarks of politics, not science. I am not convinced that support is the appropriate response.”

Dan Carlson was a friend of Michael’s. He felt he may have been too harsh earlier, so he tried a more moderate tone. “Michael, you’ve been following my research. You know that I’ve been working with Global Circulation Models for years now. If I have learned one thing, it’s that we can’t yet model atmospheric physics well enough to predict next year’s weather, let alone the climate of the next

century. We simply don't know Earth's level of climatic sensitivity to the input parameters like solar output, volcanos, clouds, aerosols or the suspect gases. In fact, we don't even know that we have identified all the parameters. We have to 'tune' the models significantly just to get them to represent anything near reality. That doesn't leave me with much confidence in predictions based on their output. I say let's not do anything we might regret later, like limit the use of fossil fuels."

Toni Daniels clearly sided with Michael. She had a strong background in physical geography. "We must be advocates for truth and nothing else. Promoting a cause through deception is exactly what the petition backers are doing by adopting that level of advocacy. Besides, they are simply wrong. As I already stated, there is ample evidence for global warming. More importantly, we are running out of time to avert disaster. It no longer matters whether or not anthropogenic greenhouse gases are the fundamental cause of global warming. We all know their effect, so we all know that controlling their emission will at least help reduce the rate of warming. The Kyoto Treaty may not be perfect but it is better than nothing! We certainly cannot support any petition that opposes it or that takes an anti-global warming posture!" Toni was adamant. Michael was impressed by her, although he did not agree with everything she said.

Dan responded. "Claims of impending disaster are certainly unjustified! Even if it turns out that manmade carbon dioxide is the primary cause of global warming, the prospects for the future may not be all that bleak. My garden is full of plants bigger and healthier than I have ever seen before. Agronomists are claiming that plants everywhere are experiencing the same effect because of increased atmospheric carbon dioxide. This could mean restoration of our rain forests due to the increased growth rates of trees. Higher grain yields would mean more food for more people. Deserts could become greener. Areas under ice and snow in the high latitudes could open up. New lands would be available for human occupation. Remember, carbon dioxide levels have risen only 25% in over 200 years. An offsetting amount of new vegetation is entirely possible and could bring the system back under control, limiting the average global temperature to roughly its current level.... So, Michael, why would we want to block an effort to stop the Kyoto Treaty?"

"Dan, I am concerned about scientific integrity...."

## Study Questions

1. What is meant by the term "global warming" and why may it be a problem?
2. What is the most probable cause of "global warming"?
3. What lines of evidence support or refute "global warming"?
4. Can we do anything about "global warming"?

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