By Carolyn Raffensperger

Bush Climate Halt Denies Growing Facts

In March, President Bush reneged on his campaign pledge to regulate utility emissions of carbon dioxide and then, two weeks later, announced that he would not support the Kyoto Protocol on global warming because its mandatory reductions could harm U.S. business interests. These actions occurred despite the fact that recent reports present the most convincing evidence to date of the dangers of climate change. As a recent editorial in the science journal *Nature* says, the administration "fails to offer any consistent explanation for its summary rejection of the accumulated scientific evidence that greenhouse-gas emissions are contributing to climate change."

Ironically, the United States was one of the first countries to ratify the 1992 U.N. Framework Convention on Climate Change. The treaty countries agreed to voluntary actions to reduce greenhouse gas emissions. As it became apparent that the voluntary limits would fail, the parties began negotiating legally binding limits. In 1997 these talks were concluded in Kyoto, Japan, where the United States delegation, led by Vice President Gore, helped to bring about a compromise agreement that set limits on greenhouse gases for the developed countries and the former communist nations. President Clinton signed the protocol.

At this point, U.S. leadership on climate change ended. Clinton never submitted the protocol to the Senate, which had already passed a unanimous resolution declaring it would not agree to any treaty that did not require developing countries to participate. Then last November, at a followup meeting to Kyoto held in The Hague, the United States stalemated the talks by insisting on emission credits for existing vegetation — and so be allowed to continue emitting. The European Union nations insisted that the largest polluter — the United States accounts for a quarter of global carbon emissions — engage in real reductions. The talks ended without an agreement.

U.S. recalcitrance on greenhouse gas reductions flies in the face of the scientific evidence, which is accumulating very rapidly. Here's what that evidence tells us, and what it doesn't.

The U.N. treaty process is informed by the U.N. Intergovernmental Panel on Climate Change, an organization of 1,500 of the world's leading scientists on the issue. The 150 scientists and government representatives on the panel's working group on the science of climate change accepted its most recent report, issued last year, unanimously. Five years ago, the IPCC had concluded that "the balance of evidence suggests that there is a discernible human influence on global climate." The new report assigns a confidence level of 95 percent to its finding that global warming is indeed happening, and from 66-90 percent to its conclusion that the warming is caused by human activities.

The panel projected over the next century a further rise of from 2.7 to 10 degrees Fahrenheit — about double its estimate of five years ago. "It is now widely undisputed that the increased intensity of the hydrological cycle will lead to a rise in sea levels, and in some regions, to more frequent floods and droughts," said John Houghton, co-chair of the working group.

Where did these predictions come from? Almost all of what we know about global climate change is a result of the use of computer models. The answers are only as good as the models and the confirmatory observations of the real world. Critics of the global warming hypothesis argue that modelers fudge inputs to get the answer they want. Because modelers are using a very skinny data base — only about a 100 years of actual temperature readings — the output can vary significantly.

However, there are checks on the models. First, the models have to simulate current climate conditions, such as the levels of carbon dioxide and other gases as well as the rise and fall of temperatures in various parts of the globe. Second, the historical record provides an additional accuracy gauge, even if the data are sparse. The IPCC, reviewing an array of models, finds the evidence of further warming convincing.

Still, there are uncertainties within the predictions, which is why the panel assigns them ranges and confidence ratings. The uncertainties in detecting warming of the globe and attributing it to anthropogenic causes are a result of the noise in the system created by natural fluctuations in climate. The reason that it's difficult to predict future warming is that humans are doing other things to affect climate. Perhaps most significant of these actions is additional emissions from burning fossil fuels and other fires — aerosol particles. While aerosols such as soot can absorb heat and warm the planet, others can reflect heat. Almost every model predicts significant warming, but uncertainties about aerosols make for uncertainties about just how much warmer.

The effects of increased greenhouse gases nonetheless appear to be very real. The April issue of *Conservation Biology* shows changes in northward expansion of the geographic range of many species and some extinctions, plus changes in reproductive behavior. Other sources document alarming changes in glaciers and a 40-percent thinning of the Arctic icecap since 1958 as well as shrinking of the area it covers, which could dramatically affect the climate of the northern hemisphere.

The Climate Convention was signed by the father of the current president. Perhaps the new president will look at the ever increasing certainty of the science and commit the United States to constructive action.

Carolyn Raffensperger is Executive Director of the Science and Environmental Health Network in Ames, Iowa. She can be reached at craffensperger@compuserve.com.