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## Federal Study Finds Accord on Warming

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A scientific study commissioned by the Bush administration concluded yesterday that the lower atmosphere was indeed growing warmer and that there was "clear evidence of human influences on the climate system."

The finding eliminates a significant area of uncertainty in the debate over [global warming](#), one that the administration has long cited as a rationale for proceeding cautiously on what it says would be costly limits on emissions of heat-trapping gases.

But White House officials noted that this was just the first of 21 assessments planned by the federal Climate Change Science Program, which was created by the administration in 2002 to address what it called unresolved questions. The officials said that while the new finding was important, the administration's policy remained focused on studying the remaining questions and using voluntary means to slow the growth in emissions of heat-trapping gases like carbon dioxide.

The focus of the new federal study was conflicting records of atmospheric temperature trends.

For more than a decade, scientists using different methods had come up with differing rates of warming at Earth's surface and in the midsection of the atmosphere, called the troposphere. These disparities had been cited by a small group of scientists, and by the administration and its allies, to question a growing consensus among climatologists that warming from heat-trapping gases could dangerously heat Earth.

The new study found that "there is no longer a discrepancy in the rate of global average temperature increase for the surface compared with higher levels in the atmosphere," in the words of a news release issued by the Commerce Department and approved by the White House. The report was published yesterday online at [climatescience.gov](http://climatescience.gov).

The report's authors all agreed that their review of the data showed that the atmosphere was, in fact, warming in ways that generally meshed with computer simulations. The study said that the only factor that could explain the measured warming of Earth's average temperature over the last 50 years was the buildup heat-trapping gases, which are mainly emitted by burning coal and oil.

All other industrial powers except Australia have accepted mandatory restrictions on such gases under the Kyoto

Protocol, but efforts to extend and expand that treaty face hurdles.

The Intergovernmental Panel on Climate Change, a [United Nations](#) body that conducts an exhaustive periodic review of causes and impacts of warming, has just finished reviewing drafts of its next assessment, to be published next year.

Scientists involved in that effort, while refusing to comment on specific findings, said that research since the last assessment, in 2001, had generated much greater certainty that humans are the main force behind recent warming, and that much more warming is in store unless emissions are curtailed.

Michele St. Martin, a spokeswoman for the White House Council on Environmental Quality, said, "We welcome today's report" and added that it showed that President Bush's decision to focus nearly \$2 billion a year on climate monitoring and research was "working."

Thomas Karl, the director of the National Climatic Data Center in the Commerce Department and the lead editor of the report, said it was not simply a review of existing work but also, by forcing scientists with differing views to meet repeatedly, resulted in breakthroughs.

"The evidence continues to support a substantial human impact on global temperature increases," Dr. Karl said.

John R. Christy, an author of the new report whose analysis of satellite temperature records long showed little warming above Earth's surface, said he endorsed the conclusion that "part of what has happened over the last 50 years has clearly been caused by humans."

But Dr. Christy, who teaches at the University of Alabama, Huntsville, said the report also noted that computer simulations of the climate system, while good at replicating the globally averaged temperature changes, still strayed in projecting details, particularly in the tropics.

This implied that the models remained laden with uncertainties when used to study future trends, he said.

Dr. Christy also said that even given what the models projected, it would be impossible to slow warming noticeably in the coming decades. Countries would be wise to seek ways to adapt to warming, he added, even as they seek new sources of energy that do not emit heat-trapping gases.

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