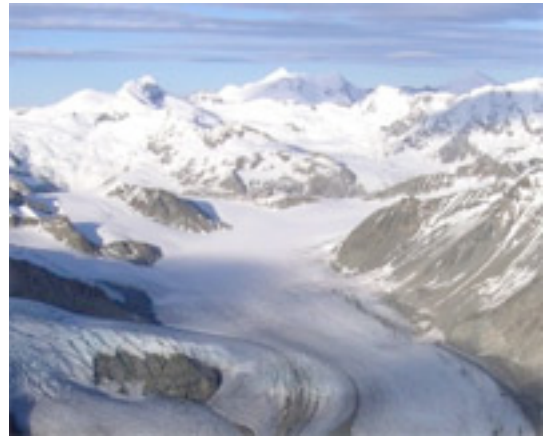


Is global warming preventing an Ice Age?

Dec. 17, 2008

Courtesy University of Wisconsin-Madison and [World Science](#) staff

Although human-caused global warming is potentially leading the world into ecological catastrophe, it may also be sparing us from one of the Earth's periodic ice ages, some researchers say.



The claim, even if correct, by no means indicate global warming is good: its future effects are quite unknown, scientists say, whereas ice ages, while certainly unpleasant, at least have precedents.

But as a matter of scientific curiosity, it's worth noting that "increased glaciation... would probably be happening today" if humans weren't here, said John Kutzbach, a climate modeler at the University of Wisconsin-Madison.

The theory is reminiscent of another recent piece of research, suggesting about of global warming may have kept Earth from totally freezing over hundreds of millions of years ago. Only now, researchers, say, some thing similar could be happening to day.

The controversial idea—first proposed by University of Virginia climatologist William F. Ruddiman—is based in turn on another unusual contention, Kutzbach said. This is that human-induced global warming started many years before it's generally accepted to have begun.

The common wisdom is that the advent of the steam engine and the coal-fueled industrial age two centuries ago marked the beginning of human influence on global climate. But Kutzbach and likeminded scientists contend it really started thousands of years ago with large-scale agriculture in Asia and extensive deforestation in Europe.

Although these processes would have been a much weaker influence on climate than industrial activity, their effect becomes important because of the longer time period involved, said Stephen Vavrus, a climatologist at the university.

Both ancient and modern global warming would have had the same source: the release into the atmosphere of so-called greenhouse gases that act like a blanket, trapping heat on Earth.

Greenhouse gases would have taken the form of methane from terraced rice paddies in Asia and carbon dioxide from burning forests in Europe. The resulting warmer atmosphere would have heated the oceans, making them much less efficient storehouses of carbon dioxide, reinforcing global warming, according to Kutzbach and Vavrus.

The pair presented their research Dec. 17, along with Gwenaëlle Philippon of the Saclay Center of Studies in L'Orme des Merisiers, France, at a meeting of the American Geophysical Union in San Francisco.

“No one disputes the large rate of increase in greenhouse gases with the Industrial Revolution,” Kutzbach notes. “The large-scale burning of coal for industry has swamped everything else” in the record, he added.

But looking earlier, using climatic archives such as 850,000-year-old ice from Antarctica, scientists are teasing out evidence of past greenhouse gases in the form of fossil air trapped in the ice, the group said. That ancient air, the researchers said, contains the signature of increased levels of atmospheric methane and carbon dioxide beginning thousands of years before the industrial age.

“Between 5,000 and 8,000 years ago, both methane and carbon dioxide started an upward trend,” explains Kutzbach.

Ice ages, or glacial periods, have occurred at regular 100,000-year intervals during the last million years. Each period has been paced by regular and predictable changes in the orbit of the Earth known as Milankovitch cycles, a mechanism thought to kick start glacial cycles, Kutzbach and colleagues explained.

“We’re at a very favorable state right now for increased glaciation,” said Kutzbach. “Nature is favoring it at this time in orbital cycles.” Importantly, the new research underscores the key role of greenhouse gases in influencing Earth’s climate, he added. Whereas decreasing greenhouse gases in the past helped initiate glaciations, the early agricultural and recent industrial increases in greenhouse gases may be forestalling them, say Kutzbach and Vavrus.

Image: Although human caused global warming is potentially leading the world into ecological catastrophe, it may also be sparing us from one of the Earth’s period ice ages, some researchers say. (Image courtesy USGS)