

It's All in a Name: 'Global Warming' Vs. 'Climate Change'

Many Americans are skeptical about whether the world's weather is changing, but apparently the degree of skepticism varies systematically depending on what that change is called.

According to a University of Michigan study, more people believe in "climate change" than in "global warming".

"Wording matters," said Jonathon Schuldt, the lead author of the article about the study and a doctoral candidate in the U-M Department of Psychology.

Schuldt co-authored the study with other two U-M psychologists. For the research, they conducted a question wording experiment in the American Life Panel, an online survey (.), with a national sample of 2,267 U.S. adults. Participants were asked to report their level of certainty about whether global climate change is a serious problem. In the following question, half the participants heard one version, half heard the other:

"You may have heard about the idea that the world's temperature may have been going up [changing] over the past 100 years, a phenomenon sometimes called 'global warming' ['climate change']. What is your personal opinion regarding whether or not this has been happening?"

Overall, 74 percent of people thought the problem was real when it was referred to as climate change, while about 68 percent thought it was real when it was referred to as global warming.

These different levels of belief may stem from the different associations carried by the two terms, Schuldt said. "While global warming focuses attention on temperature increases, climate change focuses attention on more general changes," he said. "Thus, an unusually cold day may increase doubts about global warming more so than about climate change. Given these different associations and the partisan nature of this issue, climate change believers and skeptics might be expected to vary in their use of these terms."

Abridged and adapted from: *Science Daily*



1 Answer the following questions in your own words.

1. How was the survey conducted?
2. Why is the survey called "a question wording experiment"?
3. What were its results?
4. What does it prove?

2 Summarize the text in not more than 100 words

Reducing Acid Rain

There are several ways to reduce acid rain—more properly called acid deposition—ranging from societal changes to individual action.

To solve the acid rain problem, people need to understand how acid rain damages the environment. They also need to understand what changes could be made to the air pollution sources that cause the problem. The answers to these questions help leaders make better decisions about how to control air pollution and therefore, how to reduce—or even eliminate—acid rain.

Clean up smokestacks and exhaust pipes

Almost all of the electricity that powers modern life comes from burning fossil fuels such as coal, natural gas, and oil. Acid deposition is caused by two pollutants that are released into the atmosphere when fossil fuels are burned: sulfur dioxide (SO_2) and nitrogen oxides (NO_x).

There are several options for reducing SO_2 emissions, including using coal containing less sulfur, washing the coal, and using devices called “scrubbers” to chemically remove the SO_2 from the gases leaving the smokestack. Power plants can also switch fuels—for example, burning natural gas creates much less SO_2 than burning coal.

Use alternative energy sources

There are other sources of electricity besides fossil fuels. They include nuclear power, hydropower, wind energy, geothermal energy, and solar energy. There are also alternative energies, such as natural gas, batteries, and fuel cells, available to power automobiles.

Restore a damaged environment

Acid deposition penetrates deeply into the fabric of an ecosystem, changing the chemistry of the soil and streams and narrowing the space where certain plants and animals can survive. Because there are so many changes, it takes many years for ecosystems to recover from acid deposition, even after emissions are reduced and the rain pH is restored to normal. However, there are some things that people can do to bring back lakes and streams more quickly. Limestone or lime (a naturally occurring basic compound) can be added to acidic lakes to “cancel out” the acidity. Even though this process is expensive and does not solve the broader problems of changes in soil chemistry and in watershed, it does often permit fish to remain in a lake, allowing the native population to survive in place until emissions reductions reduce the amount of acid deposition in the area.

Take action as individuals

It may seem like there is not much that one individual can do to stop acid deposition. However, like many environmental problems, acid deposition is caused by the cumulative actions of millions of individual people. Therefore, each individual can also reduce their contribution to the problem and become part of the solution. Individuals can contribute directly by conserving energy, since energy production causes the largest portion of the acid deposition problem.



1 Answer the following questions in about 7 lines.

1. What is the connection between electricity and acid rain?
2. Why is it difficult to restore a damaged ecosystem?
3. Think of all the ways in which you can help reduce acid rain.