Earth & Sky: Transcripts from the International Science Radio Program

Earth & Sky
RADIO SERIES

The Earth & Sky radio series and website can be found at www.earthsky.org. The programs are produced by a non-profit organization committed to describing humans' work to understand themselves and their relationship to the Earth. The information in the Earth & Sky website, and in the daily radio series, is developed from interviews with scientists. These individuals observe the world and create and test hypotheses. Their finding are checked before publication by other experts, in a process known as "peer review." These stories were selected for this activity from many that are available on the topic. For additional stories on Climate Change and many other environmental topics visit the Earth & Sky website. Enjoy the interviews.

Climate Study - Part 1

Thursday, September 2, 2004

JB: This is Earth and Sky. John Harte is an ecologist at the University of California, Berkeley.

DB: In the mid-1980s, before global warming came to be recognized as fact by most scientists, Dr. Harte wondered how rising temperatures would affect plants.

John Harte: ... my idea at that time was, well, the best way to really learn what is going on was to heat up an ecosystem and see what happens. And the work up to that point involving climate manipulation was really all done in little growth chambers where you would take a potted plant and subject it to different temperatures. And I wanted to look at whole ecosystem processes on a large scale.

JB: So Harte and his team went to a sub-alpine meadow in rural Colorado—a place carpeted with flowers each summer. The scientists built towers and strung a cat's cradle of cables between them. Then they hung electric heaters from the cables. In 1990, they flipped a switch and have been heating the meadow ever since.

DB: The aim of the study is to mimic a world that's two degrees Celsius warmer than the world we live in. Many climate scientists predict that Earth will warm by at least this much in the next 50 years. Some findings from the first 14 years of Harte's experiment—on our next edition of Earth and Sky.

JB: Or for more you can visit our website at earthsky.org. Our thanks to the National Science Foundation—where discoveries begin. We're Block and Byrd for Earth and Sky. Author(s): Marc Airhart

Climate Study - Part 2

Friday, September 3, 2004

DB: This is Earth and Sky. We've been speaking with John Harte, an ecologist at the University of California at Berkeley.

JB: He and his colleagues wanted to know how an increase in air temperature would affect plants and soils in a sub-alpine meadow in rural Colorado. For the past 14 years, they've used heaters to artificially warm several plots of land in the meadow by two degrees Celsius.

DB: In the heated plots, flowering plants are being replaced by sagebrush—a woody shrub that can tolerate more heat and dryness. Sagebrush doesn't store carbon in the soil as well as flowering plants. So that leaves more carbon in the air in the form of the greenhouse gas carbon dioxide.

JB: So an increase in sagebrush could ultimately lead to more heat trapped by Earth's atmosphere—and a further temperature rise. Also, sagebrush leaves absorb more sunlight than the leaves of flowering plants. According to Dr. Harte, both of these feedbacks can make Earth warmer.

John Harte: My current belief—based not just on my experiments now but other people's as well—is that our current global warming models are probably underestimating the magnitude of future warming because they ignore these ecological feedbacks.

DB: Our thanks to the National Science Foundation—where discoveries begin. We're Block and Byrd for Earth and Sky. Author(s): Marc Airhart

These radio shows can be found at www.earthsky.org