

Study: Land use has had profound effects

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U.S. biologists say they've determined 300 years of land-use activities have had profound effects on the Earth's ecosystem.

University of New Hampshire scientists George Hurtt, Stephen Frolking and colleagues say land-use changes have affected between 42 percent and 68 percent of the global land surface.

They analyzed historical records, satellite data and computer modeling to produce the first global land-use history description designed specifically to allow global carbon and climate models to assess the affects of landuse history, both on the past and current sources and sinks of carbon and climate.

Hurtt said the data will allow the next generation of coupled carbonclimate models to include the most advanced representations of land-use practices yet.

"Land-use activities are known to have added large amounts of carbon dioxide to the atmosphere, altered surface reflectivity and led to habitat alteration and destruction," said Hurtt. "A major challenge for scientists now is to understand the combined effects of these activities on the dynamics of the carbon-climate system. This study provides a key basis for these assessments."

The research is reported in the journal Global Change Biology.

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