

Full details

All details held on the selected case study are shown below.

Went live on	Title	Reference
12 Aug 2009	Climate and human influence on wildfires	SID0180

Synopsis

Climate influences wildfires, but humans have also affected their frequency, reducing their number over many centuries. However, as the climate becomes warmer, their number, and severity, is likely to increase.

Description

Climate has always been the main global influence on wildfires. In the last 200 years, however, people have influenced outbreaks more and more. By analysing hundreds of charcoal remnants in sedimentary cores from six continents, it has been shown that wildfires decreased from the first century AD up until the 1800s. The lowest incidence of fires was for a period of 200 years during the Little Ice Age.

Later, the rate rose dramatically from the start of the industrial revolution. It reduced again abruptly from 1870. Despite the rise in the population at the time, the decline in wildfires is attributed to a number of human influences. These include intensive grazing and agriculture (both reducing the biomass available for burning) and fire management.

Surprisingly, the number of wildfires continued to fall well into the 1970s. But since then, there have been an increasing number of large fires resulting in property destruction and deaths. These have raised concerns about the impact of human activity and climate on wildfire occurrence in the future.

The study was part of NERC's Quantifying and Understanding the Earth System (QUEST) programme. It was also part of the International Geosphere-Biosphere Cross Project Initiative on Fire. NERC and the National Science Foundation, USA, jointly funded the study.

"It's inevitable that warmer climates will cause more fires naturally, despite recent human activities that helped reduce their numbers. Fires that raged out of control in southern Europe, Nepal, Australia, and North America over the last few years may be evidence of what's to come. The next decade may see a spectacular increase in major fires globally," said Professor Sandy Harrison, leader of the QUEST programme at the University of Bristol. "The record of past wildfires, put together by the QUEST Working Group, suggests strongly that current fire management policies are misdirected. Policies that emphasise prevention of human ignitions, including the backstop of military-style operations to stop wildfires, will become even more ineffective in a warming climate."

The analysis was an international project that involved: Department of Geography, University of Oregon, USA; Centre for Bio-Archaeology and Ecology, Institut de Botanique, Montpellier, France; Department of Earth Sciences, Montana State University, USA; Climate and Environmental Physics, Physics Institute and Oeschger Centre for Climate Change Research, University of Bern, Switzerland; Utah Museum of Natural History, Department of Geography, University of Utah, USA; QUEST, Department of Earth Sciences and School of Geographical Sciences, University of Bristol, UK.

Jennifer Marlon, PhD student at the University of Oregon, USA, was the lead author of the study's report.

References and links

Hyperlinks

1. [Centre National de la Recherche Scientifique - Wildfires closely linked to climate change \(04/02/09\)](#)
2. [Global Palaeofire Working Group - Home](#)
3. [International Geosphere-Biosphere Programme \(IGBP\) - Wildfire responses to abrupt climate change in North America \(03/02/09\)](#)
4. [Nature Geoscience - Climate and human influences on global biomass burning over the past two millennia \(September 2008\)](#)
5. [QUEST - Home](#)
6. [University of Bristol - School of Geographical Sciences - Professor Sandy Harrison](#)

Impacts

Research and funding

Funding type	Research Programme
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Funding partners	£ Unknown	NERC
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£ *Unknown*

Other public sector - National Science Foundation, USA

Classification	
Science themes	Climate system, Natural hazards, Environment, pollution and human health
Science areas	Atmospheric, Earth, Terrestrial