

First Australians did not boost fire activity

December 6 2010, By Bob Beale

(PhysOrg.com) -- The arrival of the first people in Australia about 50,000 years ago did not result in significantly greater fire activity, according to a landmark new research report on the continent's fire history going back 70,000 years.

Despite a widely held belief that the frequent use of [fire](#) by Aboriginal people resulted in vegetation change and other environmental impacts in [prehistoric times](#), the most comprehensive study of Australian charcoal records has found they had no major impact on fire regimes.

The arrival of European colonists after 1788, however, resulted in a substantial increase in fire activity, according to the report by an international team of 19 scientists led by palaeoecologist Dr Scott Mooney, of the UNSW School of Biological, Earth and Environmental Sciences, and published in the journal *Quaternary Science Reviews*.

On large time scales, overall fire activity in Australia predominantly reflects prevailing climate, with less activity in colder glacial periods and more in the warmer interglacials, the study found.

"Ideas about prehistoric fire continue to influence debates concerning natural resource management, with suggestions that Aboriginal-like fire management – that is, frequent and low- intensity fires - could prevent some of the massive bushfires we have seen in modern times in Australia," says Dr Mooney.

"Yet when we correlate the archeological evidence of increased human

activity over the past 40,000 years with the composite charcoal record, we find no fundamental shift that could be associated with the colonization of Australia by Aboriginal people. While this may seem contrary to prior studies, it should be remembered that it is only very recently that enough charcoal records have become available at a continental scale to analyse them with robust statistical techniques.

"Australia includes some of the most fire-prone landscapes on Earth and fire has major impacts on the native flora and fauna, on landscape stability and on the cycling of nutrients through soil and water.

"Rather than prehistoric people, we found that the major driver of fire activity in Australasia has been shifts between warm and cool climatic periods."

Australian plants have developed a variety of responses and morphological and reproductive adaptations to fire, including the widespread use of re-sprouting, suggesting that fire has played an important role over evolutionary time scales, the report notes. Many species require regular fire in order to persist, particularly evident in humid but intermittently drought-prone environments where eucalypt trees dominate the vegetation.

The study was based on an analysis of charcoal records at 223 sites from Australasia, including New Zealand and Papua New Guinea. Despite some gaps in place and time, the researchers say these data provide a comprehensive coverage of climate and vegetation types found in the region.

The team notes that the number and geographic distribution of charcoal records for the period between about 60,000 and 28,000 years ago makes Australasia one of the best-documented regions of the world during that time.

The records show that bushfire activity was high from about 70,000 to about 28,000 years ago. It then decreased until about 18,000 years ago, then increased again – a pattern consistent with fire and climate trends globally.

Provided by University of New South Wales

Citation: First Australians did not boost fire activity (2010, December 6) retrieved 20 April 2024 from <https://phys.org/news/2010-12-australians-boost.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.