

# MEDIA RELEASE

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ATTENTION: Chiefs of Staff, News Directors

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## Bushfires and climate change

Fires are a substantially underestimated cause of increased carbon dioxide emissions in the atmosphere, an international study led by UTAS researcher Professor David Bowman has found.

Prof Bowman of the School of Plant Science, said the internationally-recognised research has found that fire needs to be recognised as an integral part of climate change, especially in Australia where bushfires are common.

Prof Bowman and 21 other researchers from around the world, including Dr Fay Johnston from the Menzies Research Institute, have published their findings in the prestigious journal *Science* discussing the role of fires on human health, ecosystems, society, and climate change.

Prof Bowman said while the immediate destructive effects of fire are obvious, their ongoing effects on many planetary systems including carbon and water cycles are also profound.

The work is the culmination of a meeting supported by the Kavli Institute for Theoretical Physics (KITP) and the National Centre for Ecological Analysis and Synthesis (NCEAS), both based at UC Santa Barbara in the USA and funded by the US National Science Foundation.

“Large fires have huge economic, environmental, and health costs. The tragic fires in Victoria emphasise the ubiquity of recent large wildfires and potentially changing fire regimes that are associated with man-made climate change,” he said.

While it is widely accepted that climate affects fire, the research authors show that fires have the capacity to affect the climate through the release of greenhouse gases.

Fires are one of the largest causes of increased carbon dioxide emissions in the atmosphere, but Prof Bowman said carbon dioxide is not the only contributor to climate change through burning plants.

“Methane, aerosol particulates in smoke and the changing reflectance of a charred landscape also contribute to changes in climate,” he said.

“Climate affects fire, but more worryingly fire affects climate. This feedback has been overlooked in the projections of the Earth's climate.”

“We're most concerned that fire has not been rigorously and adequately incorporated in the climate models,” Prof Bowman said.

“It's remarkable that such an integral part of the landscape has been so sidelined.”

Prof Bowman said the research paper's estimate of fires' influence on climate is just a start and that there are major research gaps that must be addressed in order to understand the complete contribution of fire to the climate system.

“Our work highlighting the importance of fire in the Earth system presents challenges for modeling future climates and managing greenhouse gas emissions,” he said.

**For more information please contact Professor David Bowman on 6226 1943.**

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