

# **Greenhouse Gas Emissions from Bushfires in Australia - an analysis of carbon cycling and inventory accounting issues**

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The severe wildfires seasons in 2003 and 2006 have refocused attention on the impacts of fire on air quality and air composition in Australia. As a fraction of total National greenhouse gas emissions, forest fires in Southern Australia are typically minor. They account on average for approximately 5% of the carbon emitted and 20 % of greenhouse gas emissions from fires in Australia, and all fires contribute, on average, 3% of total National greenhouse gas emissions. In the extreme years this contribution rises to 35% and 5% respectively. National accounting of the emissions follows defined methodologies with well defined boundaries and accounting rules that usually include only a subset of the forest biogeochemical cycles. However the direct and transient effects of fire in Australian ecosystems can constitute a significant proportion of forest Net Primary Productivity. The recent development of the 2006 IPCC guidelines has broadened the boundaries of emissions accounting to potentially include some of the longer-term effects of fire on the carbon cycle. In this paper I review the implications of these changes for emissions accounting.