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# An Improved Methodology for Calculating Greenhouse Gas Emissions from Fires in Native Vegetation in South-West Western Australia

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Under its commitment to the United Nations Framework Convention on Climate Change and the Kyoto agreement, Australia is required to report its annual emissions of greenhouse gases (GHGs). Emissions from fires in savanna woodlands, rangelands and forests of southern Australia account for 2%-4% of national emissions and therefore are identified as a key source category. The current National GHG Inventory (NGGI) is simple and practical but does not take full advantage of the considerable knowledge of fuel and fire properties accumulated over many years by State land management agencies. This is particularly the case for the forests where the methodology is coarse relative to available knowledge. Recent extreme and extensive fire events have focused attention on this emission source with calls for improved regional accuracy and resolution. This paper presents a proposed refinement to current NGGI methodology for native vegetation fires in the south-west of WA.

To be useful a regional GHG methodology must be fully compatible with the national methodology and be practical to implement. As a first approach it should fully access statistics that are currently collected. The proposed revision extends the NGGI methodology to account for variation between fire region, forest class and fire class, and seasonality variation in fuels and combustion characteristics, thus reducing uncertainty and improving accuracy with minimal additional cost. An analysis of the fire regimes in south-west WA is presented and the comparative costs and benefits of alternative methodologies are discussed.



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