
Wildfire and Water Quality: Processes, Impacts and Challenges
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Reducing wildfire risk in water supply catchments using payments for ecosystem services

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Abstract In New South Wales (NSW), Australia, local combinations of sclerophyllous vegetation dominated by *Eucalyptus* species, rapid fuel accumulation, terrain and weather can result in a high probability of uncontrollable wildfires. For example, in December 2001 and January 2002 the “Black Christmas” bushfires burned 733 342 ha of forest, including 225 000 ha within the Sydney water supply catchments. Evidence from several studies in NSW indicates that the effects of wildfires pose an unacceptable risk to water supplies. A parliamentary inquiry into the Sydney fires has resulted in a greater focus on hazard reduction. As forests in NSW occur on a mixture of land tenures, legal, institutional and economic barriers limit the effectiveness of efforts to reduce wildfire risk. This paper introduces the concept of payments for ecosystem services (PES) and discusses successful schemes that have recently been implemented to reduce the risk of wildfires in catchments supplying water to the cities of Santa Fe, New Mexico and Denver, Colorado in the USA.

Key words payments for ecosystem services, PES; hazard reduction; water supply catchments; forest management