

## **Hydrologic impact of fire on the Croppers Creek paired catchment experiment**

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**Abstract** The Croppers Creek paired catchment project was established in 1975 to examine the hydrologic effects of conversion of native eucalypt forest to pine plantation. In 1980, Clem Creek catchment was converted to radiata pine. In 2006, following prolonged severe drought, all catchments were burnt by wildfire. The pine plantation was killed and the eucalypt forests were scorched. These recovered by producing epicormic shoots. Flows from the eucalypt forest catchments were zero before the fire; small outflows post-fire may possibly be attributed to a cessation of transpiration. The diurnal variation in flow from the pine catchment ceased on burning, indicating a cessation of transpiration. The outflow from this burnt catchment was similar to the pre-burn catchment, despite the death of the pines. In all catchments there was a generation of occasional, high “spike” flows as a distinct fire effect. Vegetation and transpiration capacity appears to have recovered by one year. After three years, fire effects were no longer detectable. The data, together with satellite image analysis, suggested that the impact of the drought on the hydrology was severe and inseparable from the fire effects.

**Key words** water yield; radiata pine; eucalypt; fire; water balance; streamflow