

Unmanned Aircraft Systems for Remote Sensing

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Abstract:

The drivers of spatial distribution of mallee trees is still not well understood and can benefit revegetation programmes, biomass farming, and cropping on former mallee soils. Much of the site, 5300 hectares, was burnt in January 2014. In June 2014, a multicopter unmanned aerial vehicle (UAV) and RGB camera was flown over 1 ha adjacent to the Calperum Mallee Flux Tower. We mapped the site 5 months and 15 months after the fire to characterise regrowth dynamics in the post fire period and compared it to two other unburnt sites. A census survey of a section of the burnt site was performed to identify the distribution of seedlings.

The burnt site began with a random distribution, and tended toward dispersed regeneration, with new seedlings clustered in the intervening spaces. The unburnt sites were also randomly distributed.

The results of the study provide insight into the spatial dynamics of vegetation regrowth after a fire with implications for distribution modelling and fire management. The cost effective nature of the method offers promise for similar studies at this scale.