FUTURE SCENARIOS FOR AUSTRALIAN BUSHFIRES
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“Providing insights into future fire regimes and their implications for people, property and the environment”
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1. A changing world
Anticipated changes in climate, fuel dynamics and ignition rates are expected to modify future fire regimes (Bradstock 2010; Cary et al. 2012a) with subsequent effects on key social and environmental assets (Gill et al. 2013).

2. Shifts in fire regime depend on moisture
Climate change effects will depend on whether fire activity is limited by fuel amount (drier ecosystems), where fire activity is expected to decrease for a warmer-drier climate, or limited by the availability of fuel for burning (moister ecosystems), where fire activity may increase (King et al. 2013). Economic, biodiversity and carbon assets are also present in the form of impacted forests in the background (Source: Gill, Stephens and Cary 2013).

3. Combined consequences of climate & CO₂
In SE Australia, the net effect of increased grass fuel productivity from higher atmospheric CO₂ of higher fire danger, and decreased fuel load due to warmer-drier conditions, may result in only small changes in grass fire intensity distributions (King et al. 2012).

4. Implications for people
Outcomes for people and their assets will depend on shifts in fire frequency and intensity, fire management effectiveness (e.g. Gibbons et al. 2012), and high-level policies governing societal responses to major fire events. Contrasting outcomes are expected in different locations.

5. Mitigation and adaptation
Minimising adverse outcomes arising from future fire regimes includes increasing resistance of assets, locating or relocating assets away from the path of fires, assisting recovery and promoting adaptation (Gill et al. 2013). As is the case at present, a key aspect of policy responses to future fire regimes must recognise parallel cycles of fire occurrence and recovery states in social asset systems.

The effects of socially disastrous fires on assets of the social system. Note that the post-fire social asset state (e.g., social disaster) is contingent on the fire circumstances and is, in part, ex situ. The indirect effects of policy and other aspects on fuel states are not shown (Source: Gill, Stephens and Cary 2013).

6. Selected references & reading

Photograph: Aftermath of Black Saturday 2009 bushfires in Victoria. The effects of fires on cars and the house as economic assets are apparent. The indirect effects of policy and other aspects on fuel states are not shown (Source: Gill, Stephens and Cary 2013).