CO-EXISTING WITH FIRE: MANAGING RISK AND AMENITY AT THE RURAL-URBAN INTERFACE

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There is widespread exposure of people and property to fire throughout Australia. The risk of damage or loss resulting from this exposure can be altered through mitigation and suppression activities in the landscape, along with a range of measures within the built environment. While bushland creates a fire risk, it also provides a range of social amenity values. This project examines the features that people value in their surrounding landscape and how these values relate to inherent fire risk, for example, by developing a cultural mapping tool that can overlay mapped risk components.

Preliminary findings: **risk**

Method:

• Dataset consisting of 309 houses damaged/destroyed by wildfire in the wooded areas of New South Wales since 2001. Two neighbouring undamaged houses were included for every damaged house, so a total of 927 houses were considered in these analyses. To account for the difference in number, undamaged houses were given a weight of 0.5 in all analyses.

• Aerial photographs were used to measure features surrounding burnt and unburnt houses. This included variables such as the distance to nearest house, structure, waterbody and patch of vegetation >1ha.

Preliminary results:

• Three major drivers of the risk of house loss to wildfire were identified through principal component analysis: the built environment, the availability of water and the distance to vegetation (see figure below).

The relationship of the built environment and water on the risk of house loss
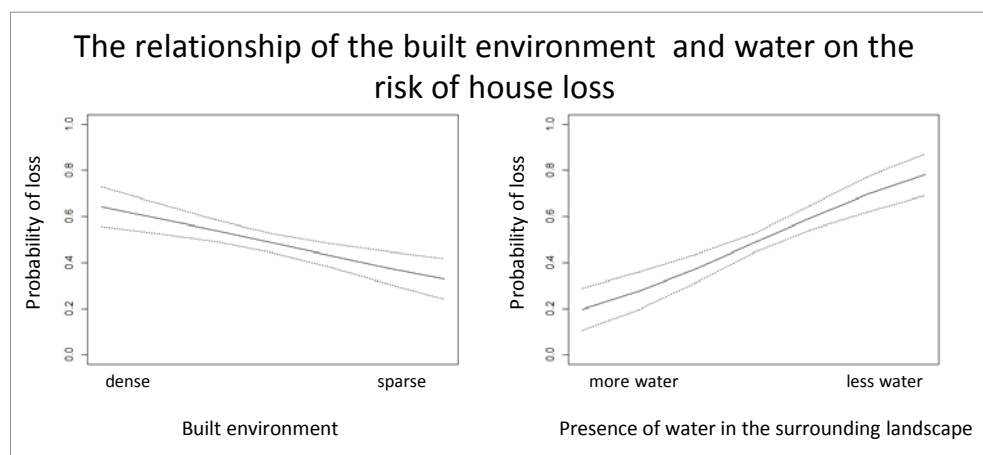
• These results suggest that isolated houses, with long drives and a greater distance to structures are more likely to burn. Similarly houses with less water around are more likely to burn.

• These results suggest that active mitigation and suppression strategies play a part in probability of house loss. These findings need to be further explored to determine consistency across urban and rural communities, and when the broader landscape is considered through the incorporation of GIS variables.

"This project provides valuable insights into property management and landholder values that can assist with determining the vulnerability of residences as well as community engagement programmes."
Dr Simon Heemstra, New South Wales Rural Fire Service

Preliminary findings: **amenity**

Interviews with 41 landholders on 31 properties in New South Wales

Methodological observations:

• The spatial interview approach provides a fine-scaled view of the what, where, how and why of vegetation management preferences and practices.

• The mental mapping exercise provides context for the subsequent walking interview where understanding is solidified.

• The interactive mapping exercises prompts residents to talk about many different parts of their property and local area.

Results from an interview mapping exercise.

Property scale / Regional scale

☐ = valued places and aspects
☐ = activities   ☐ = concerns
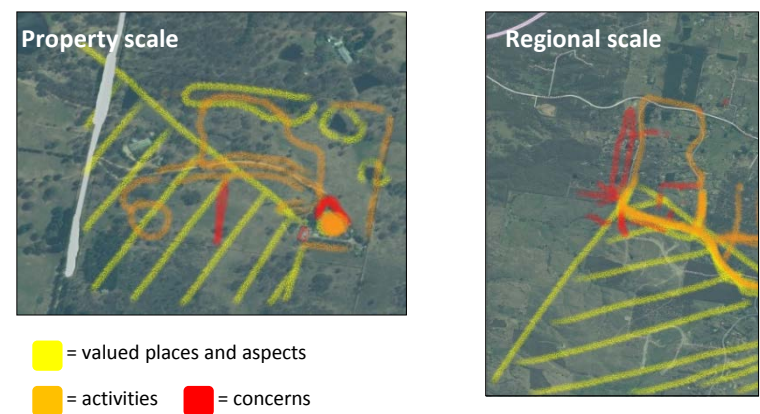
Amenity and vegetation management:

• Vegetation planting for privacy and noise protection often overrides perceived bushfire risk.

• Choice of planting is determined by economics, happenstance (such as donations or gifts) as well as aesthetics. E.g., in the late 1970s pine saplings were 3c each compared with $1.50 for native eucalyptus saplings.

• Weed management and fire hazard reduction intersect by chance for some landowners and as a thought out procedure for others.

• Landowners of larger properties, while actively managing vegetation immediately around their house, in many cases for managing bushfire risk, seem happy to let 'nature' manage other large components of their block.

• Fire is perceived by some as a regenerative value operating in the landscape in general as well as in the native bush on their own property. There is concern over a perceived lapse in recent decades of hazard reduction strategies, such as prescribed burning that mirrors 'natural' fire regimes.

Synthesis

There are both apparent overlaps and conflicts between the management of vegetation to, on the one hand, enhance amenity values and, on the other hand, mitigate bushfire risk. These overlaps and conflicts pose real challenges in terms of building bushfire resilient communities. The preliminary findings will be explored further during the final stage of this project where the results of the risk and amenity components will be combined to determine (a) how they relate to each other, (b) the management implications in high-risk areas, and (c) future possibilities for incorporating 'cultural mapping' into risk assessment procedures.