

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

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PROJECT 1: RISK

There is widespread exposure of people and property to fire on the margins of large cities and towns throughout Australia (McAneney et al. 2009). Risks to people and property can be altered through prevention and suppression activities in the landscape along with a range of measures within the urban environment (Bradstock and Gill 2001, Gill 2005). An integrated understanding of how these diverse elements may be best employed to mitigate risk is lacking. There is, however, *prima facie* evidence that treatment of bushland in close proximity to buildings may have a strong effect in reducing probability of damage and loss (Gibbons et al. 2012). Such effects are likely to be proportional to the degree, duration and extent of structural modification to vegetation, along with other complementary measures that aid suppression.

AIMS

- What level of risk from fire is faced by properties on the wildland-urban interface (WUI)?
- How effective is mitigation at the WUI, and does it change the consequential risk?
- What configuration of prevention and suppression strategies within the bushland margins of urban development is required to strongly reduce the probability of losses to people and property?

METHODS

We are using a statistical modelling approach and quantitative GIS to integrate house loss data from a succession of major fires (1990s onward) in order to quantify risk of house loss at a landscape scale. We are quantifying the likelihood of damage/destruction in relation to WUI condition (such as degree of clearing, fuel age, and vegetation type) with other factors such as weather and terrain as covariates.



Figure 1. Area of high potential influence on bushfire risk at the WUI as a function of weather, terrain and vegetation/fuel.

PROJECT 2: AMENITY

What is amenity? One definition: The hedonic, or pleasurable, aspects associated with natural and man-made features of rural areas, to include wilderness, agricultural landscapes, historic structures, and cultural traditions.

While bushland creates a fire risk, it also provides a range of values for social amenity. The number of people living in interface areas is increasing around the globe. There is limited understanding over what factors are driving individuals decisions to move into and stay in these areas. Similarly, we have poor understanding as to whether these variables increase or decrease risk from bushfires.

AIMS

- What are people deriving from living on the WUI?
- What do they value in the landscape?
- How does this relate to and residents' use and experience of the landscape?
- Can we relate this explicitly to elements of the biophysical environment (e.g. vegetation proximity, appearance, species makeup; scenery, outlook; sociability; accessibility; sense of place)?

METHODS

We plan to characterise amenity values of residents living on the WUI through interviews and focus groups, and consequently map it through qualitative GIS techniques. These interviews will generate insight into how and to what extent risk management strategies may affect amenity. Social Acceptability of management interventions is important – lack of acceptability at various scales can cause controversy and make constructive management interventions more difficult.

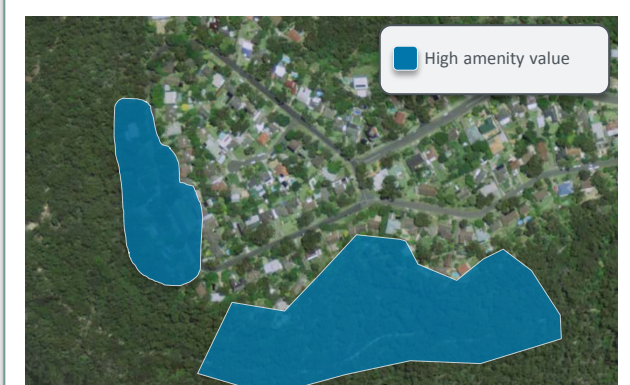


Figure 2. Areas of high amenity in an interface community

OUTCOMES

What is the best treatment regime (depth, type of treatment, rotation) needed to minimise chance of loss adjacent to forest/woodland WUI?

Are the things that comprise amenity the same things that pose most of the risk to people and property?

Understanding of the spatial relationship between amenity and factors influencing risk: Is it the same for all aspects of amenity? Does it vary among communities (urban to rural)?

Understanding the consequences of differing risk mitigation strategies on amenity of residents near the WUI

Implications for agency risk mitigation initiatives in areas with high conflict between risk and amenity (current and future)

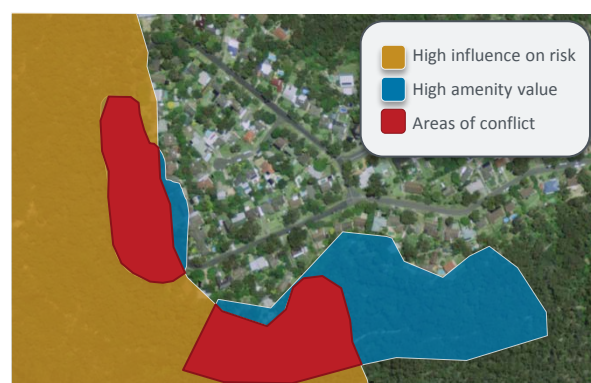


Figure 3. The intersection of areas of high risk and amenity in an interface community, illustrating areas of potential conflict

'Treating a forest merely as a collection of trees ignores its contextual relevance to people' (Stankey and Shindler, 2006)

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