HIGHFIRE RISK: COLLABORATIONS SOUGHT

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The HighFire Risk Project aims to study the key drivers behind bushfire risk in the high country. The events of January 2003 highlighted many gaps in our knowledge. It is a priority to tackle these gaps.

With a three year project span, it is vital that we work with other researchers wherever possible, to maximise stakeholder benefits and research output.

There are three main categories of collaboration sought with other researchers within the CRC – and elsewhere.

FIRE BEHAVIOUR DRIVERS:

•ALPINE METEOROLOGY
Many firefighters were caught out by unexpected and unforecast aspects of alpine meteorology, including:

- •Nocturnal low-level jets, that produced maximum FDIs between midnight and sunrise
- •Forced channelling
- •Pressure-driven channelling
- •Lee-slope channelling

•DRY SLOTS
The work of Graham Mills (an existing collaborator) shows that these are critical drivers of extreme fire behaviour. This, and other studies, need to be incorporated into fire management frameworks as soon as possible.

FIRE SCALE ESCALATION:

•BAYESIAN MODELLING
This will look at the probabilities of fire scale-class transitions as a function of the current state of the system. This will reflect how well correlated the drivers are. For example, if conditions have already caused escalation to a large fire, have the probabilities of transition to a plume-driven fire changed from their background levels?

•FIRE CLIMATOLOGY
The likelihoods of the rare, but most damaging, fires can only be assessed through study of past fires. The mapped extents of some past fires hint at recurrence of the type of fire that hit Canberra. *Are there more? Historical records will tell.*

•RISK MODELLING
We will be formalising the scale-class transition model for bushfire risk. Applying AS 4360 (the Australian Standard for Risk Management) to each scale-class yields a separate risk class. Are they different for any given asset under threat? This is a key to efficient risk mitigation.

RISK MITIGATION:

An efficient risk model provides guidance for a number of applications:

•FUEL MANAGEMENT PLANNING
It is only by recognising the role of scale-classes that an effective fuel management plan can be designed. Each class has its own imperatives for protection of any asset under threat.

•FIRE REGIME ANALYSIS
To manage fuels for public safety requires certain objectives to be met. There are other objectives for managers of biodiversity, recreation, water catchments, etc. How can we seek an optimal solution for all of these?

•ICS INCIDENT CONTROL
As fires change their scale-classes, the limitation on incident objectives change.This needs to be formalised. This will also maximise the value of fire weather forecasts,

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