



## Measuring House Loss Risk at the Interface

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### Context

- Objective to define a safe space for the occupant during the main fire impact
  - House become an envelop around this safe space



## Context of community & urban design

### •Lifestyle diversity

- Community lifestyle value systems
- Tradition practices
- Land use planning
- Economics

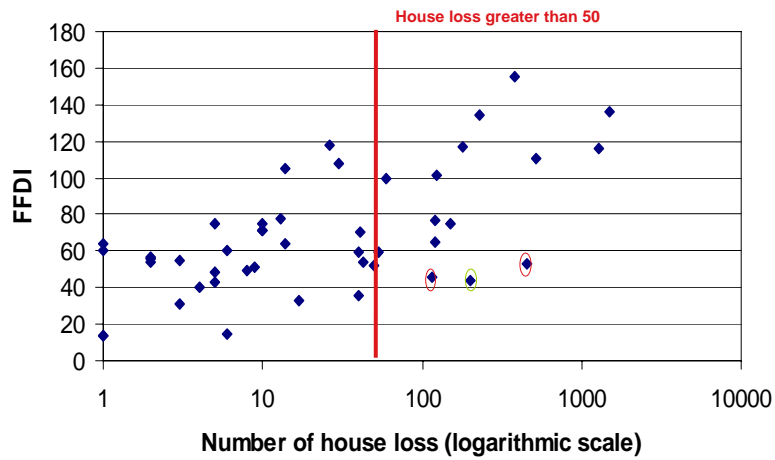
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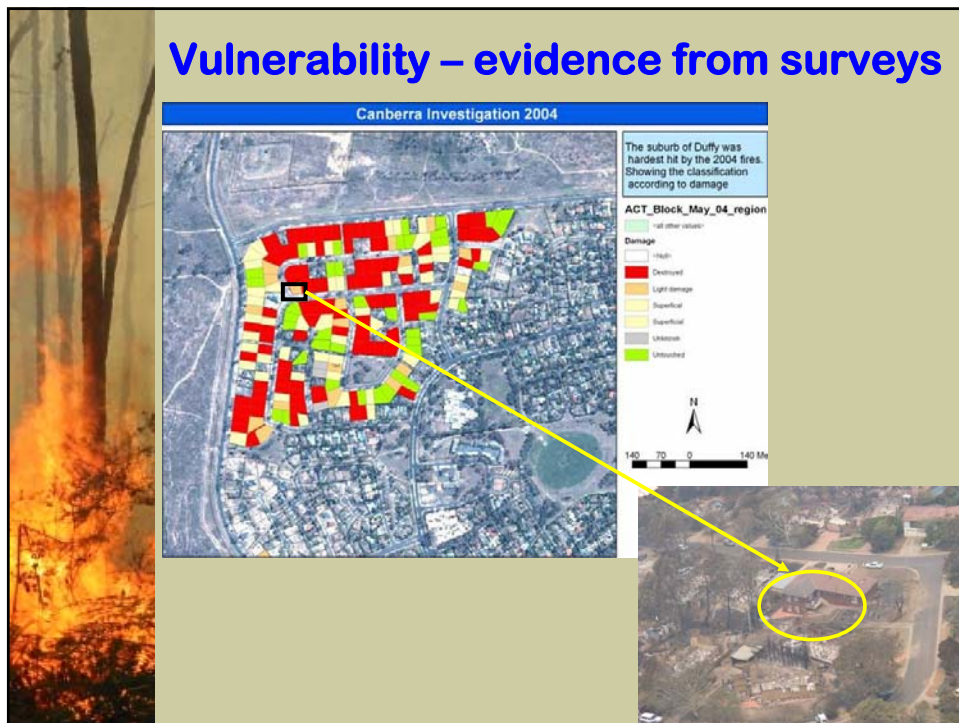
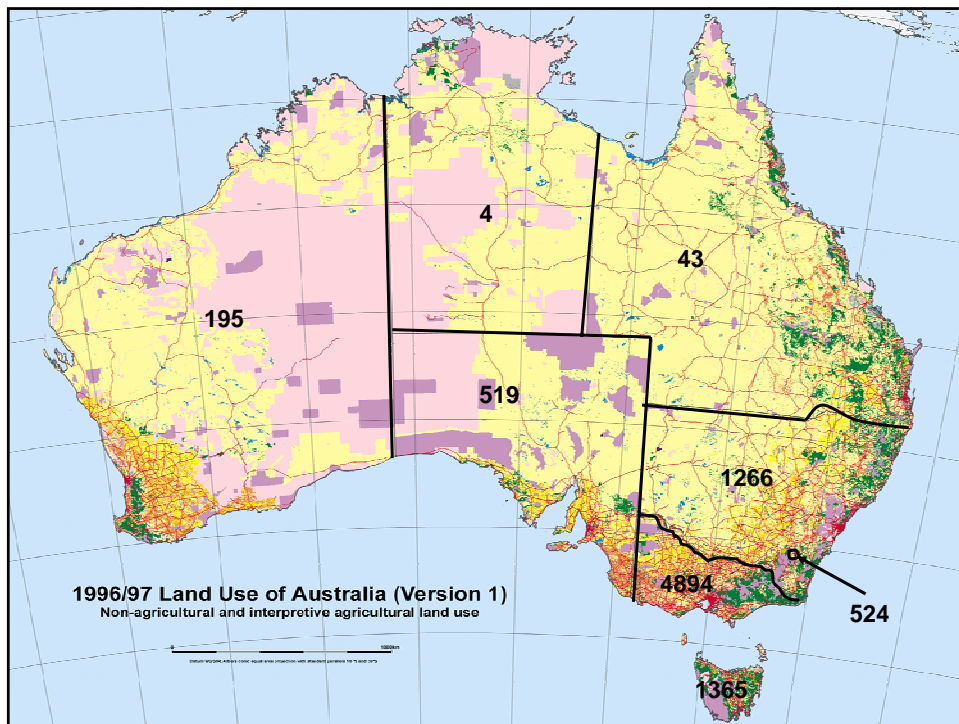
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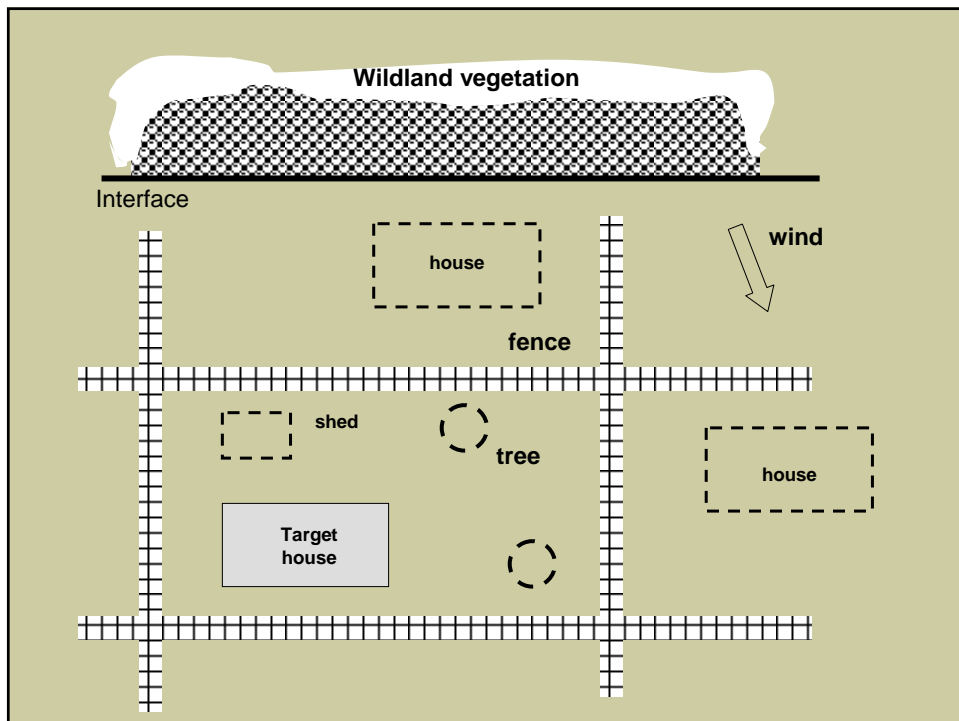
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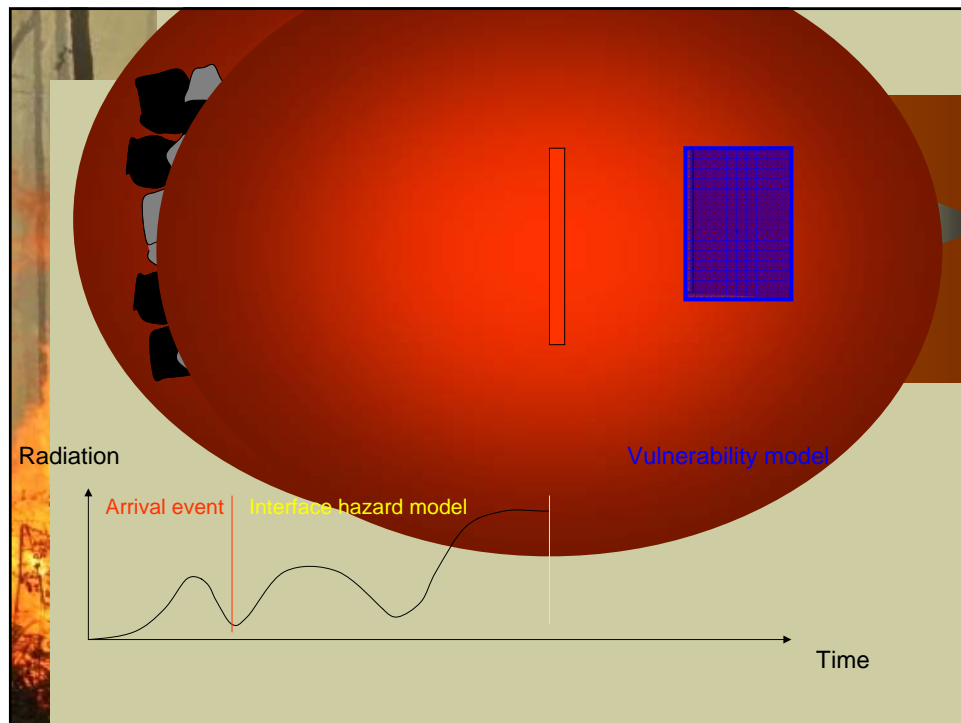
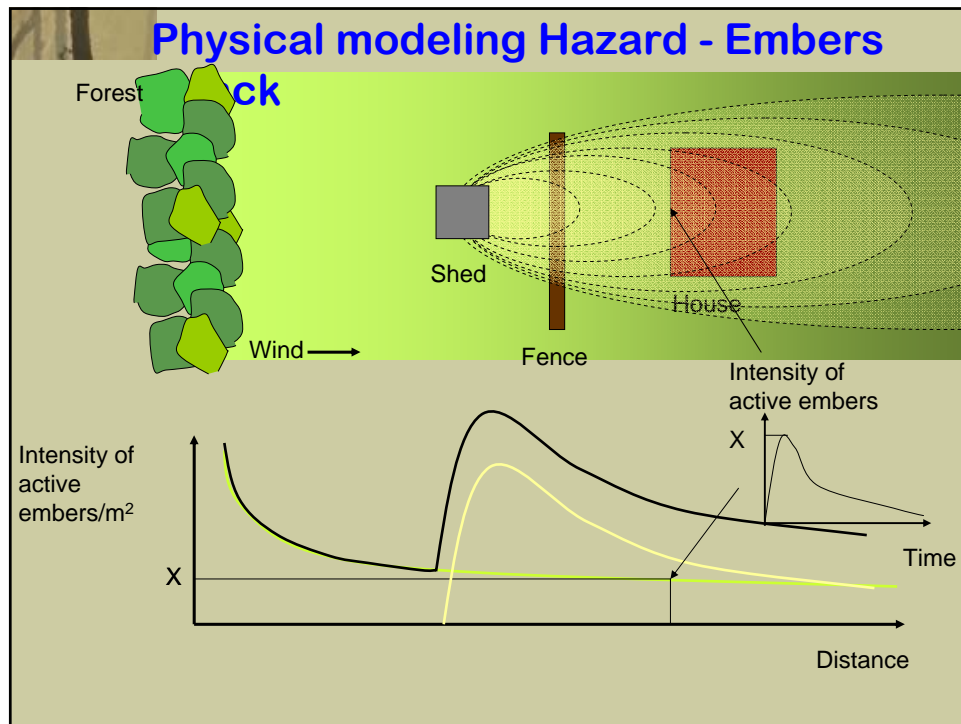
## House Loss vs Weather













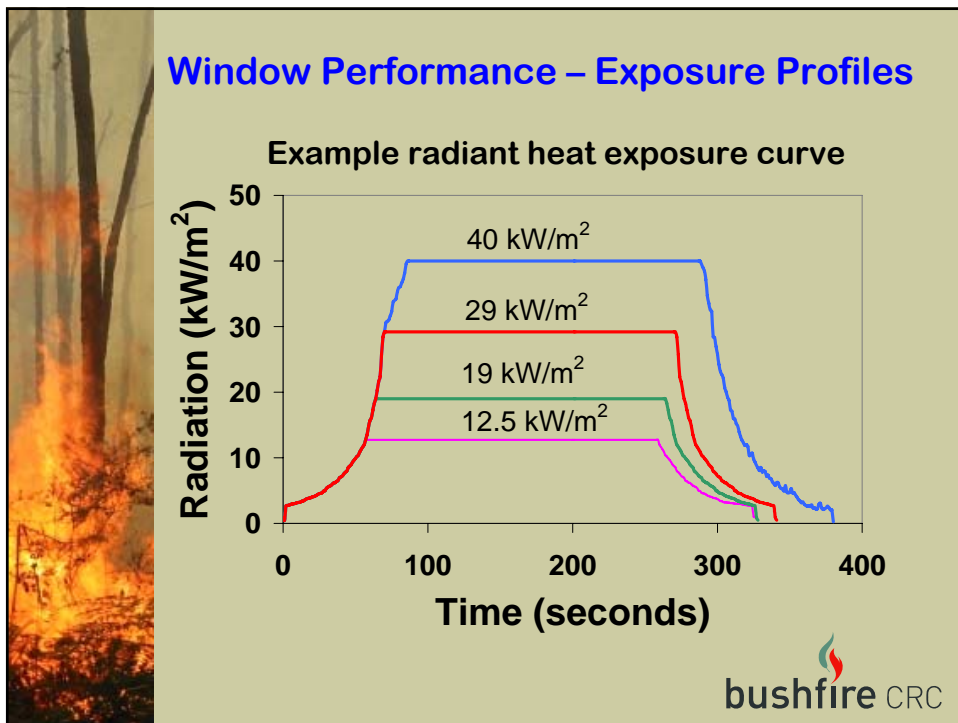
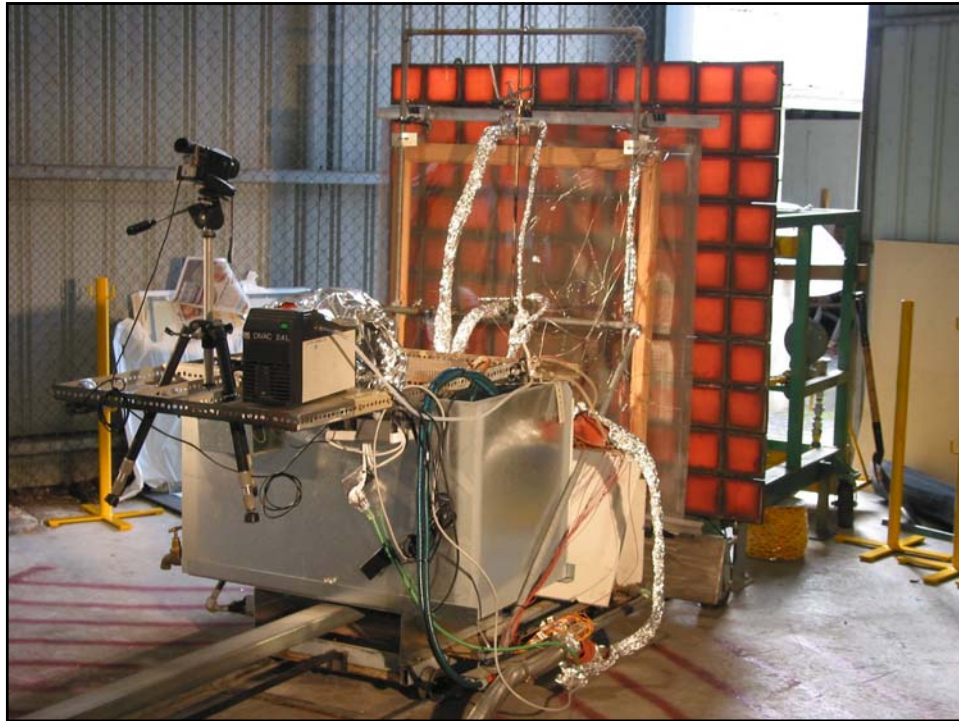


## Brushwood fence impact on houses

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## Decking Performance – large scale tests



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## Decking Performance – Small-Scale Ember Tests

Methenamine tablets used to simulate embers




Joist-deck "U" connection tested in Mass loss cone calorimeter



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Embers Attack Points (Sydney 1994)		
Mechanism	Items ignited	Ignitions
	Timber decks	13
	Eave fascia boards and or gutters	9
	Timber window frames	6
	Rough saws western red cedar cladding	5
	Timber door frames	4
	Exposed timber beams (eave structure)	4
	Timber shingle roofs	2
	Timber stairs	2
	Coir door mat	2
	Plastic roof panel	2
	Bitumen roof membrane	1
	Canvas awning	1
	Toilet roil (ember entry through unscreened window)	1
	Total	

## Fence Radiation & Embers Attack

(Sydney 1994)

Ignition Mechanism	Items ignited	Ignitions
Embers with fence radiation assisting or causing opening	Contents via broken window	2
	Timber window frame	2
	Timber door frame	2
	Eave fascia boards and or gutters	1
<i>total</i>		<b>7</b>

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## House Radiation & Embers Attack

(Sydney 1994)

Ignition Mechanism	Items ignited	Ignitions
Embers with adjacent house radiation assisting or causing opening	Eave fascia boards and or gutters	5
	Timber window frame	4
	Contents via broken window	2
<i>total</i>		<b>11</b>

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