

ECONOMIC AND ENVIRONMENTAL COSTS AND BENEFITS OF BUSHFIRE PREPAREDNESS AND RESPONSE – PILOT STUDY

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AIM

To describe the actual and potential costs and benefits of bushfire preparedness and response operations through the assessment of specific Victorian case studies

METHOD

This project will reconstruct fire progression and suppression activity from Situation Reports, Incident Action Plans and GIS archives.

Following this it will run Phoenix fire simulations assuming no suppression and with reconstructed suppression, and:

- Calculate the areas of different land uses affected
- Estimate the social, economic and environmental costs from published sources
- Compare actual costs to simulated.

- Kentbruck-Portland Nelson Road (Jan 2014) had no potential (according to Phoenix)
- Mickleham cost \$21.7m but saved \$90m
- Saved costs included impacts to water supply, vineyards and 4400 extra houses exposed
- Corryong and Kentbruck may have cost more than they saved.

CONCLUSIONS

1. Suppression clearly has huge benefits in some fires, but less in others
2. Reconstruction is very hard due to lack of detail and consistency in reporting
3. Simulation is a very uncertain means to reconstruct consequences of actions.

NEXT STEPS

- Improve methods for mapping and costing impacts
- Formalise a method using multiple Phoenix simulations
- Extend study to 20 fires
- Add simulations of the effect of prescribed burning
- Analyse daily suppression effort to determine what worked and why.

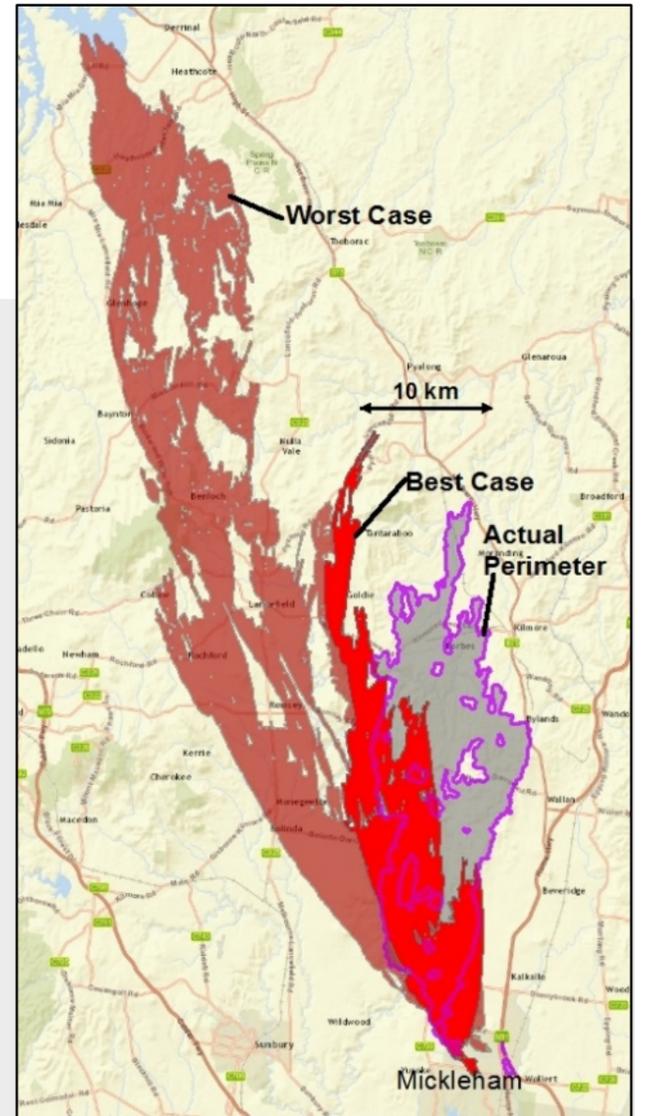


Figure 1. Reconstruction and simulation of the Mickleham-Kilmore fire (Feb 2014)

RESULTS (SEE TABLE 1)

Three fires were completed in a Pilot, with 20 planned in total.

Phoenix results so far vary hugely depending on assumptions used:

- The Mickleham fire had major potential to become much bigger without suppression (see Figure 1)
- Corryong –Kings Creek (Jan 2014) had minor potential

	Mickleham		Corryong		Kentbruck	
	Actual	Un-suppressed	Actual	Un-suppressed	Actual	Un-suppressed
Total Area (ha)	24207	55808	1252	5695	12005	791
Area Farming	18468	38969	8	122	56	0
Area Timber	0	1268	1969	1609	1430	429
Area Reserve	9	337	12	1866	10438	351
Area water supply	0	1947	0	0	0	0
# Houses exposed	1252	5695	0	3	10	0
Impact Cost (\$m)	18.2	111	0.60	1.17	3.70	0.26
Suppression Cost (\$m)	3.54	n/a	1.15	n/a	3.58	n/a
Net Cost (\$m)	21.7	111	1.75	1.17	7.28	0.26

Table 1: Costs for 3 fires, with and without suppression

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