

Mitigating extreme post fire hydro-geomorphic risk in Victoria



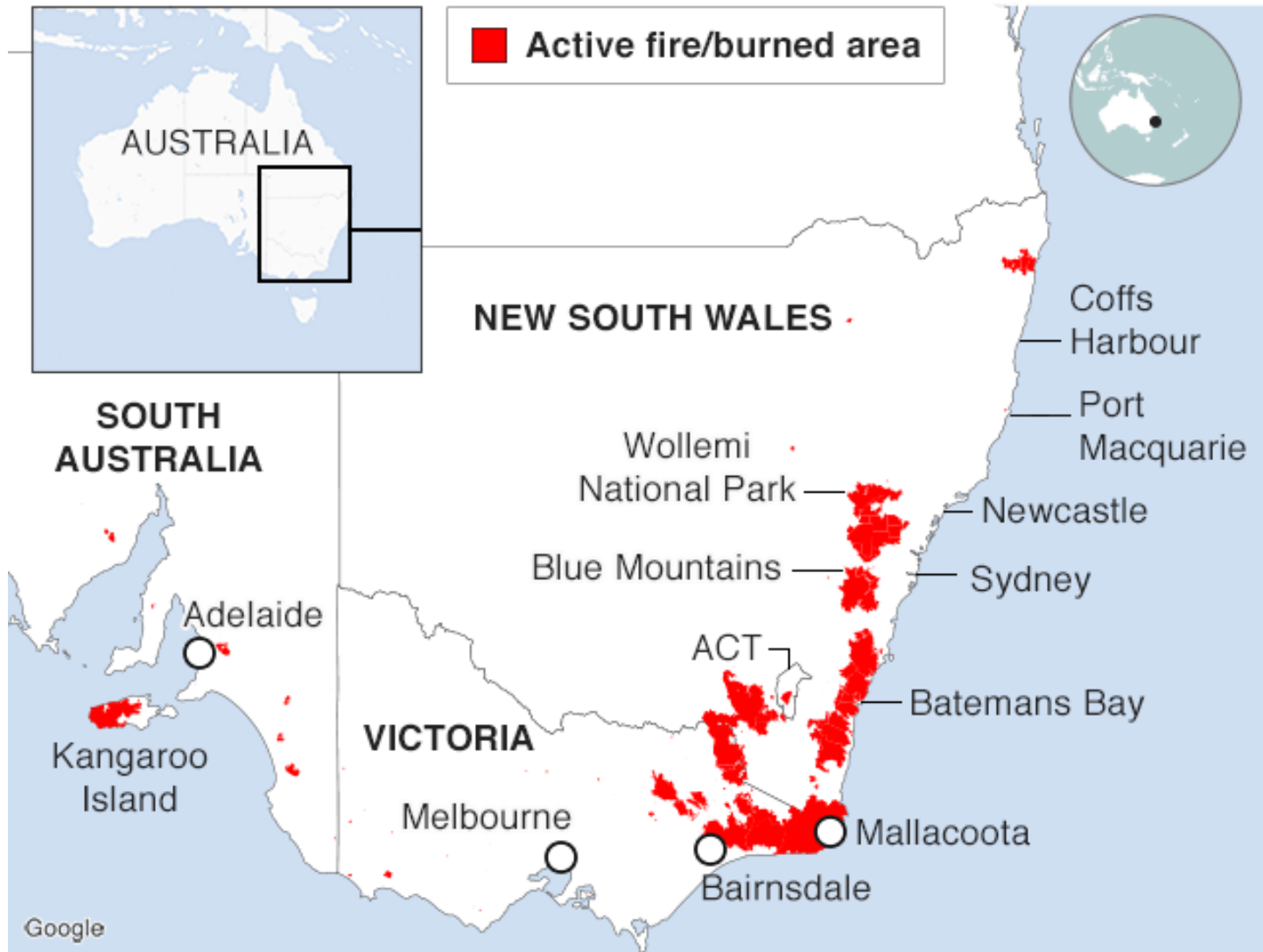
Charlie Showers

- Forest and Fire Risk Assessment Unit
- RRAT Flooding & Erosion leader



Environment,
Land, Water
and Planning

Major bushfires in Australia



Source: NSW Rural Fire Service / Victoria Country Fire Authority, 31 Jan

What are post fire hydro-geomorphic events?



Home / News / Local News

UPDATED MAY 3 2019 - 7:30AM

Mud 'just like a landslide' damages properties in Baranduda



Buckland River Catchment, Victoria
26th Feb 2003

Finest Club in Albury
The best live entertainment on the border
Find out More



CMV Travel & Bus

NATIONAL VICTORIA

This was published 4 years ago

House washed away in landslide as storms, heavy rain hit Victoria

By Marissa Calligeros
Updated December 9, 2015 - 8:27am, first published at 7:50am

Several homes have been damaged and a woman had to be rescued after her house was washed away in a landslide in Victoria's north-east on Tuesday night.

Storms lashed towns around Wangaratta and Bright from 6pm on Tuesday, causing flash floods and bringing golf ball-sized hail to the area.



Debris Flow



2018 Thomas Fire, Montecito, Santa Barbara, California

Debris Flow



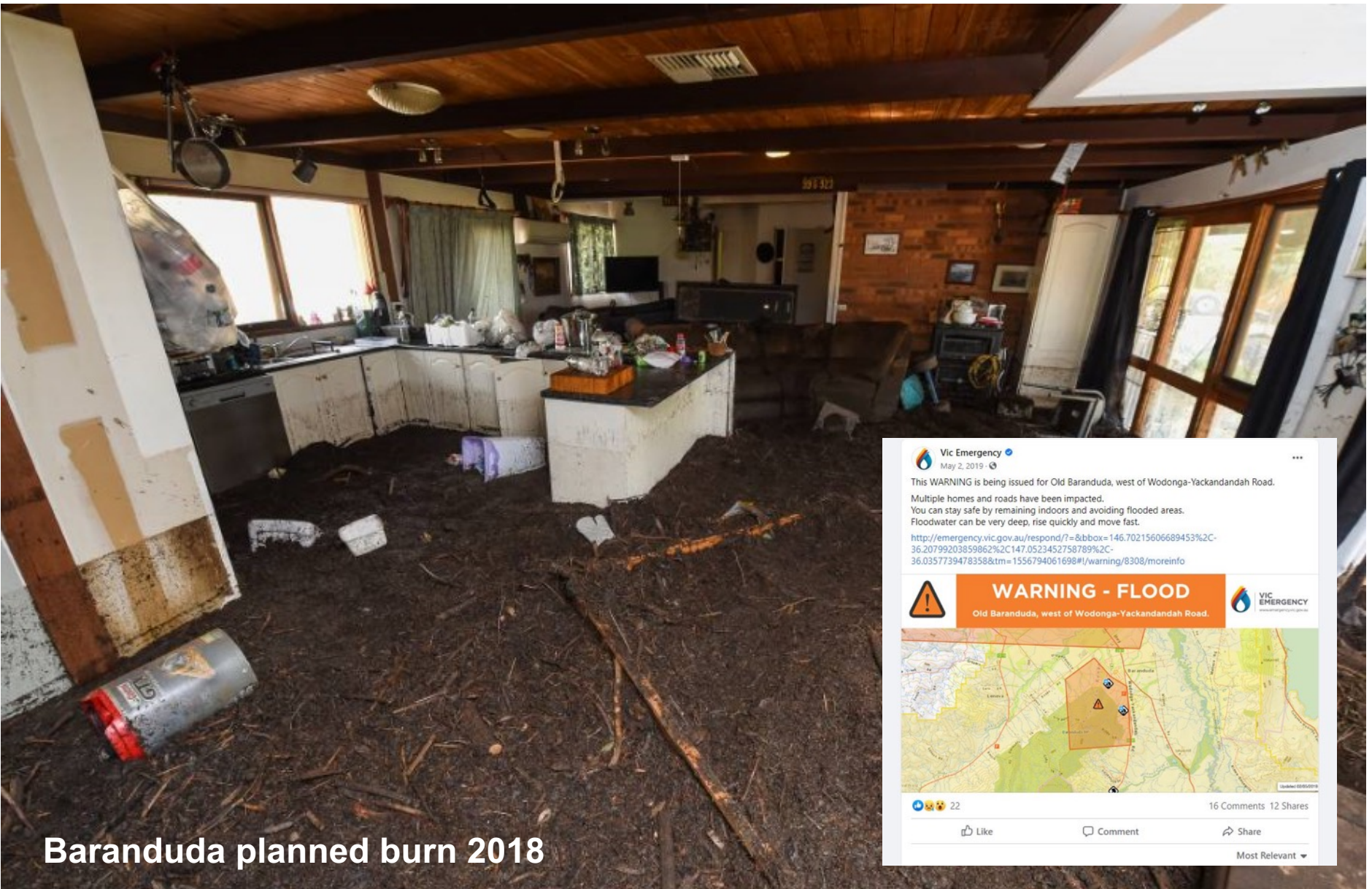
Eurobin planned burn 2015

Debris Flow



Eurobin planned burn 2015

Flash Flood



Baranduda planned burn 2018

Water Quality

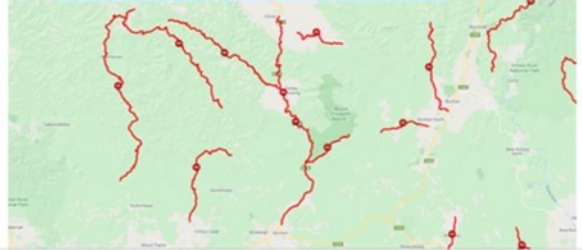


Vic Emergency
16 hrs · 🌐

The Great Alpine Road is currently **CLOSED** from Ensay to Bruthen due to debris flow after heavy rainfall on Tuesday evening. A 30 km stretch of road has been impacted by the severe weather.

For the most updated information on road closures in the area, visit the VicTraffic website at <https://traffic.vicroads.vic.gov.au/>

i **ROAD CLOSURE**
Great Alpine Road (B500)
Ensay to Bruthen



VIC EMERGENCY
www.vicemergency.vic.gov.au

👍🙄🙃 130 71 Comments 222 Shares

Water Quality



Thomson dam fire threatens Melbourne's biggest water supply, desalination plant on standby

By Richard Willingham
Posted Fri 1 Feb 2019 at 6:00pm, updated Sat 2 Feb 2019 at 10:43am



THE AGE

NATIONAL VICTORIA WATER

This was published 1 year ago

Water restrictions, desal warning for Melbourne after blaze near dam

By Liam Mansik & Simone Fox-Keeb
February 1, 2019 - 5:16pm

Melburnians could be drinking water from Victoria's desalination plant – or even be put on water restrictions – if a fire on the banks of a major water catchment east of the city is not quickly brought under control, the Water Minister has warned.

Lightning sparked a bushfire about a week ago in thick forest in the Baw Baw National Park, about three hours' drive east of Melbourne.

THE AGE

POLITICS VICTORIA WATER

This was published 1 year ago

Ash from fires threatens Melbourne's water as large desal order placed

By Adam Carey
March 18, 2019 - 10:50am

Bushfires in Gippsland have burnt 15 per cent of the forest around the Thomson Dam, Melbourne's major water catchment, leaving blankets of ash that threaten to pollute the city's water supply.

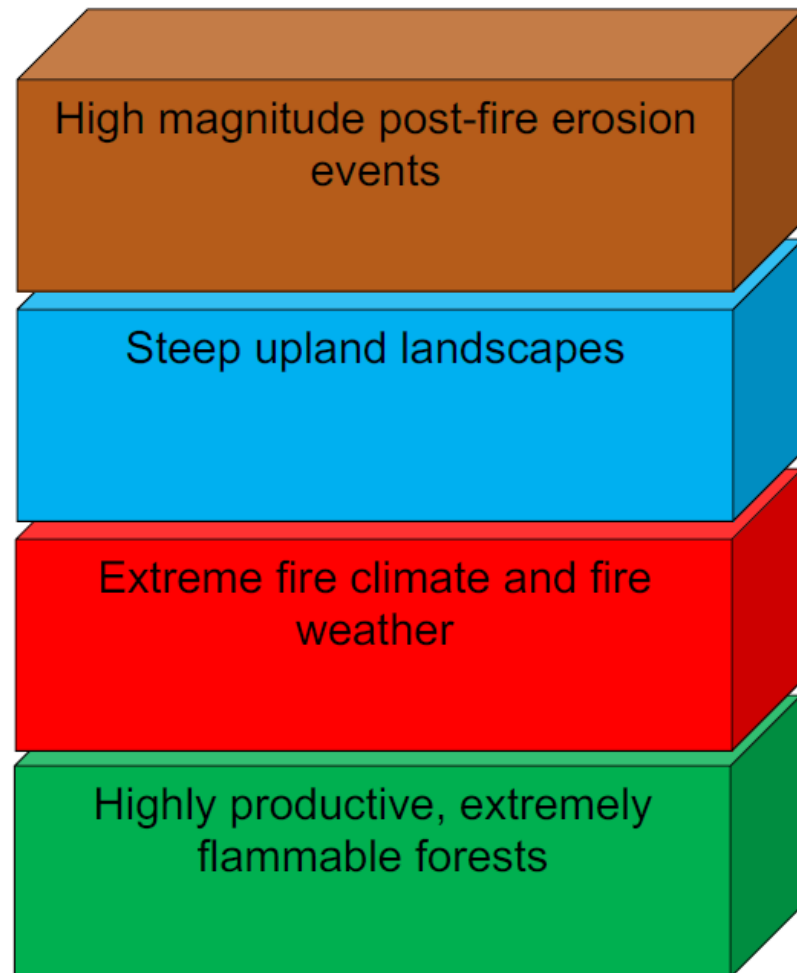
Heavy rain, while desperately needed after an extremely hot and dry summer, would only worsen the city's water outlook, as it would wash the fire refuse into the vast reservoir, rendering it unusable for months.

Up to five per cent of the forest around the smaller Upper Yarra reservoir east of Melbourne has



Victoria is special...

The building blocks of post fire hydrologic risks...



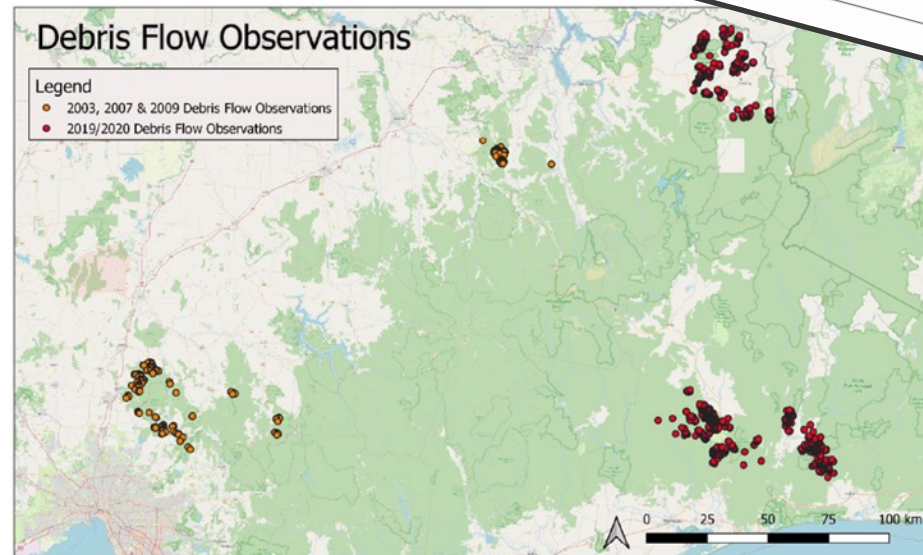
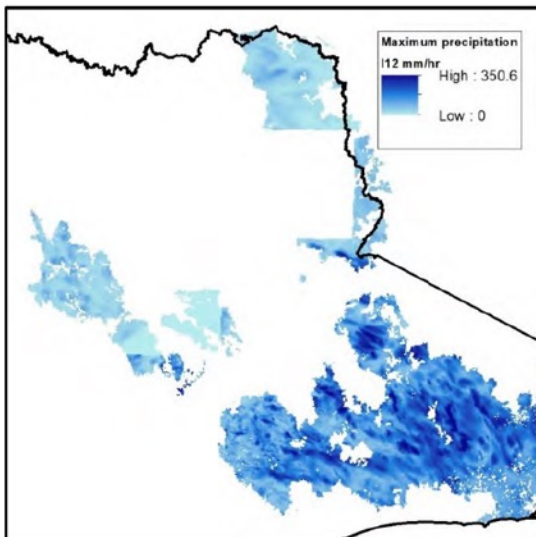
HydroFire Model



Environment,
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and Planning



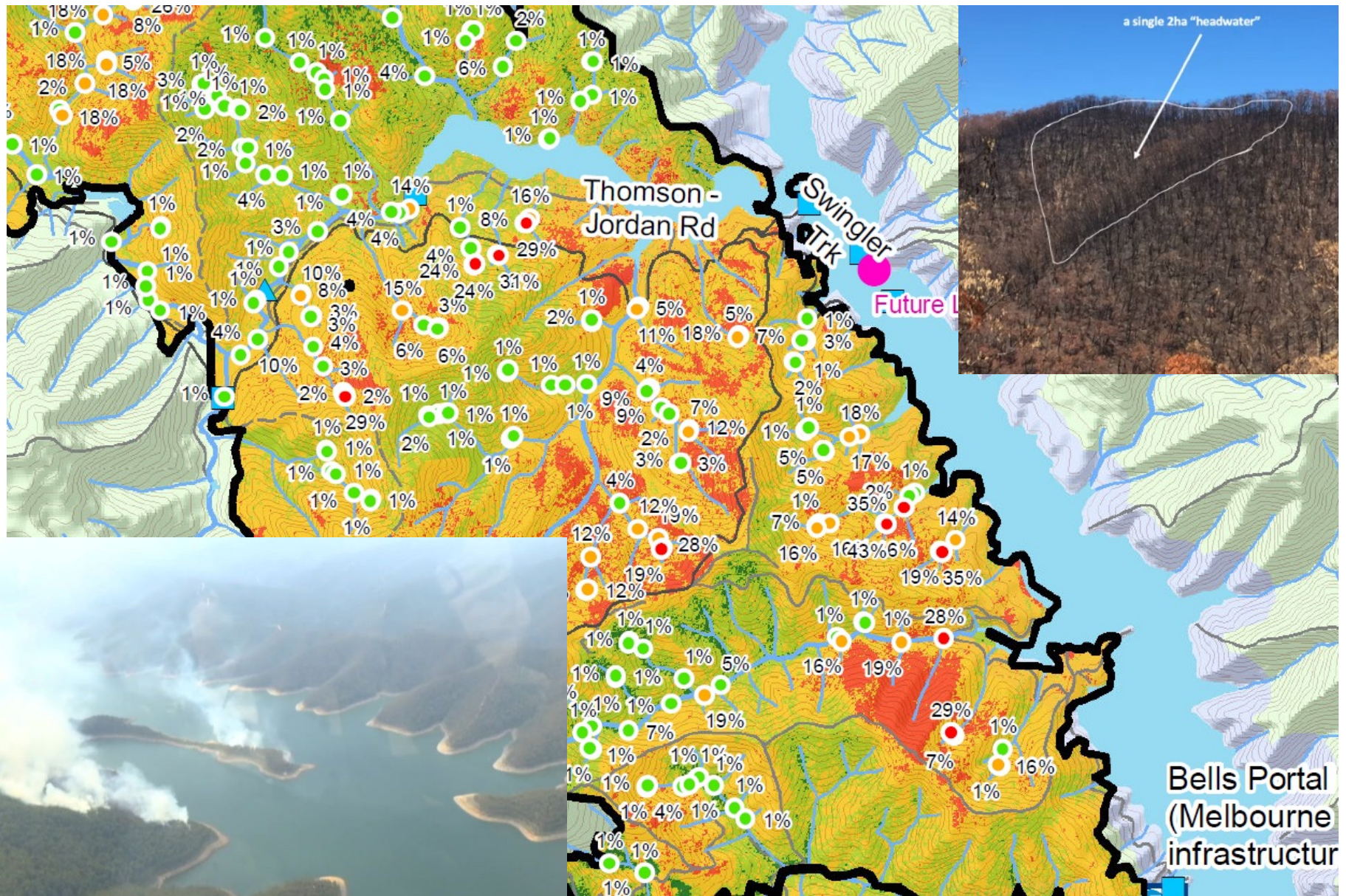
Hillslope infiltration, rainfall and debris flow data



How does HydroFire resolve post fire hydro-geomorphic risk?

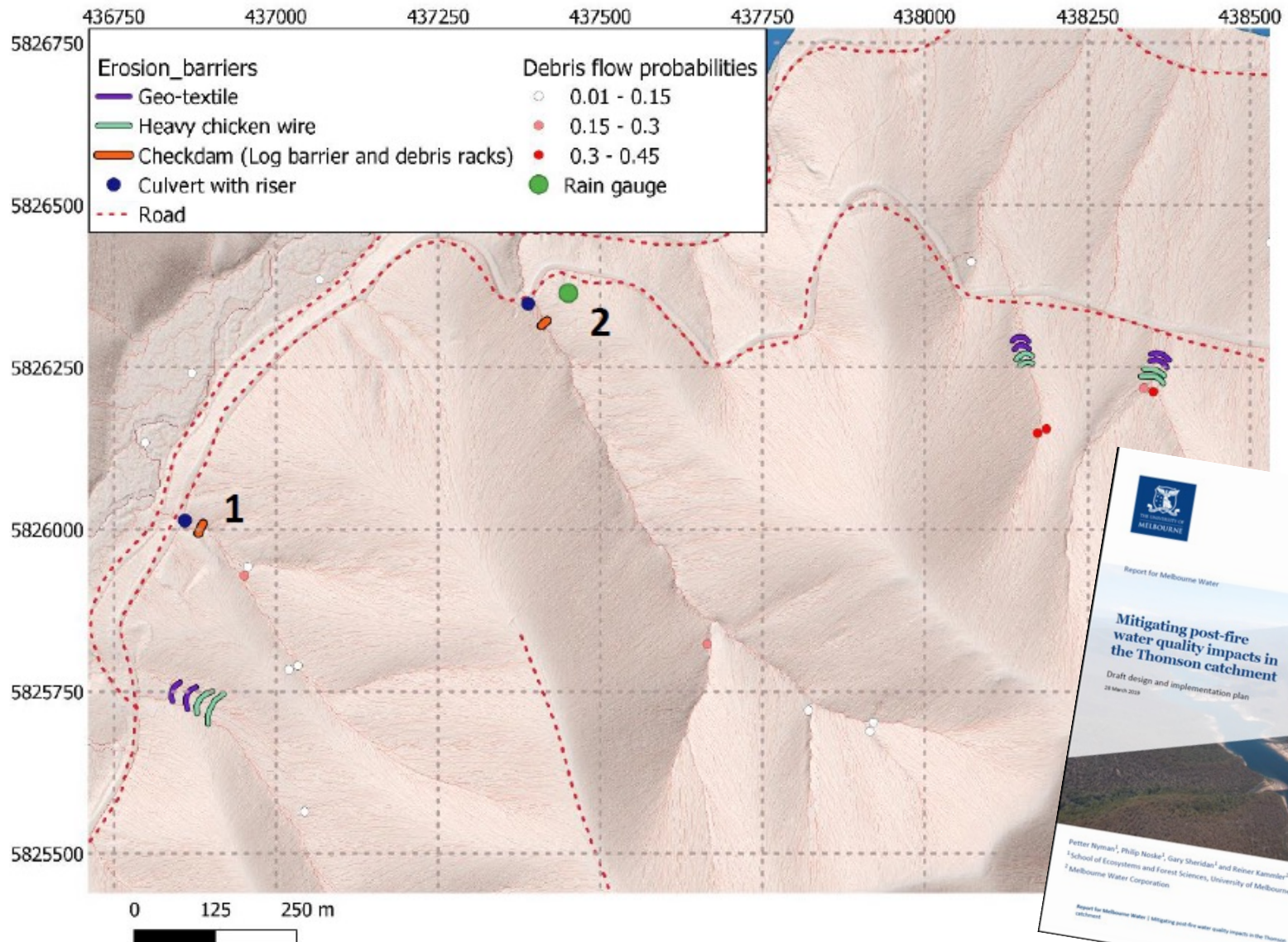


How does HydroFire resolve post fire hydro-geomorphic risk?



OFFICIAL

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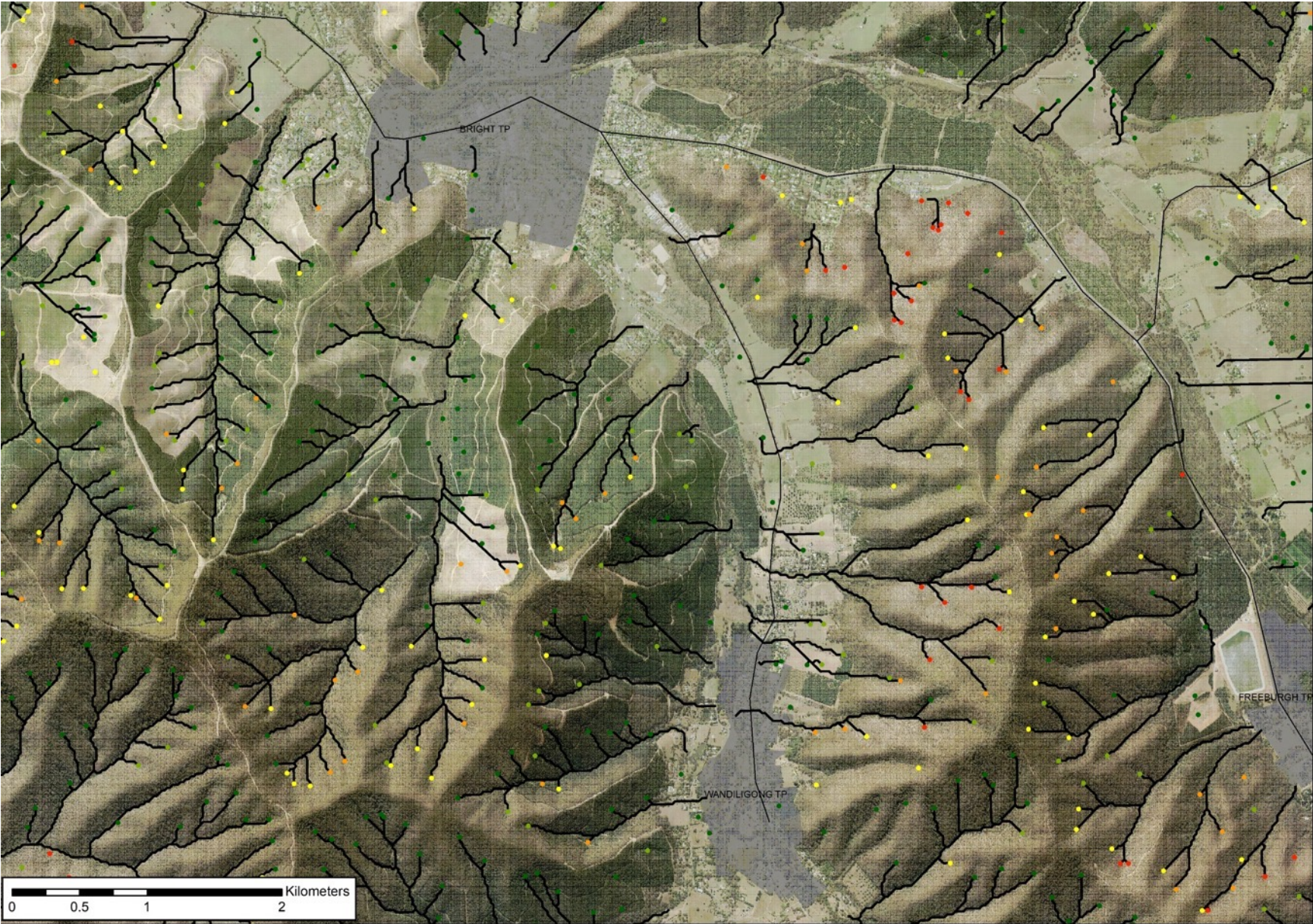


~1.5 km of debris barriers on hillslopes
(15 crew over 2-3 weeks)

How does HydroFire resolve post fire hydro-geomorphic risk?



Debris flow impact



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Debris flow impact (image blurred)



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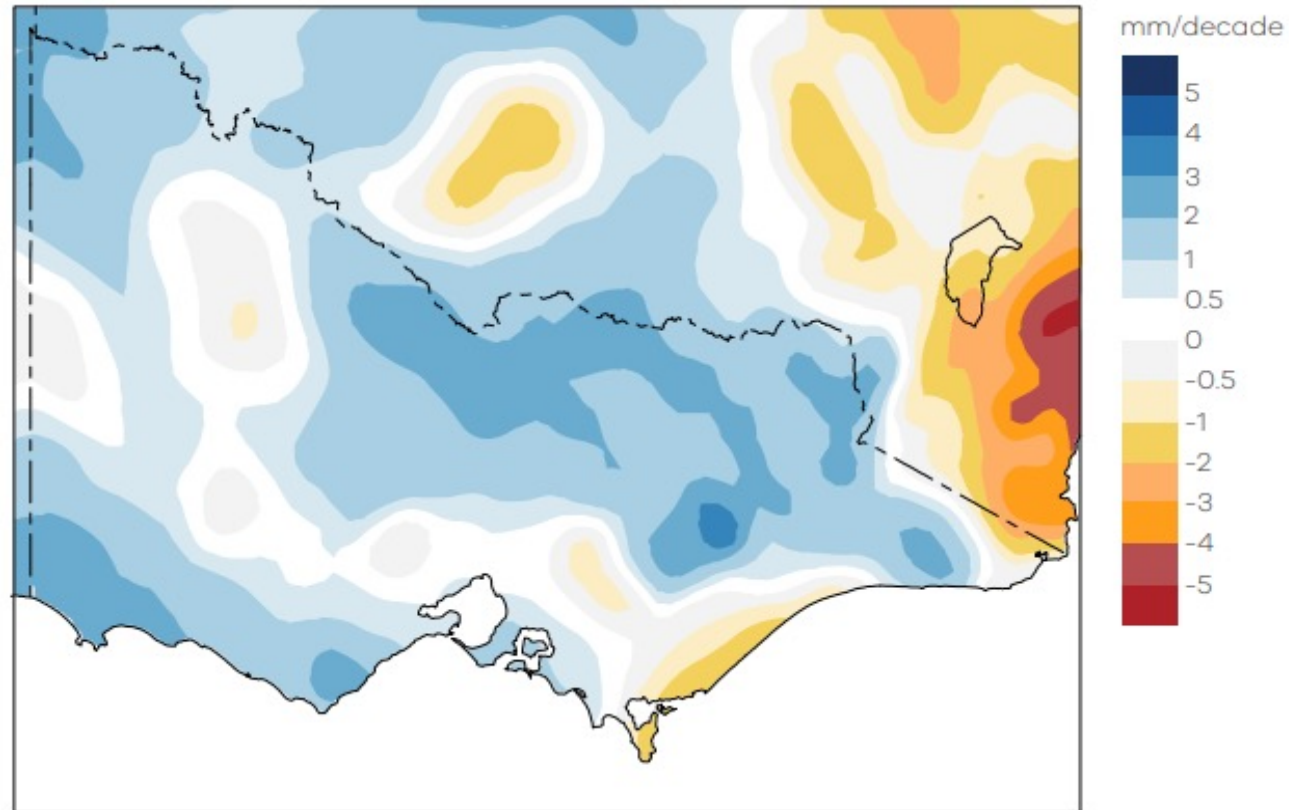


FIGURE 2.11 Trends in the annual maximum daily precipitation across Victoria using data from Australian Gridded Climate Data from 1958–2014. Note: this ends in 2014 to align with the extremes results below that is limited by data availability.

“Extreme short duration rainfall events in Victoria are becoming more intense and more frequent, particularly in the warm season” - Victorian Water and Climate Initiative (VWACI)



Further information
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