



3D Fire-Simulation for Northern Australia

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Education and training tool for northern Australian savannas using 3D printed landscapes and fire behaviour simulations that:

- **Gets people using fire and weather data**
- **Lets people see the data brought together as a fire simulation in local landscapes**
- **Is a way of communicating your fire management goals**

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How does it work?

- **NAFI derived fuel accumulation fire histories**
- **Detailed road and fence vegetation mapping**
- **Emphasizing daily and annual fire weather and curing**

Bad fire weather day

Set Up

Load model 0

Fire weather variables

Fire_Danger 8

- 1-3 Very Low
- 4-5 Low
- 6-7 Medium
- 8-9 High
- 10 Severe

wind-speed
strong

Change Speed

Wind-Direction
SE

set-time
morning

SET Fire Weather

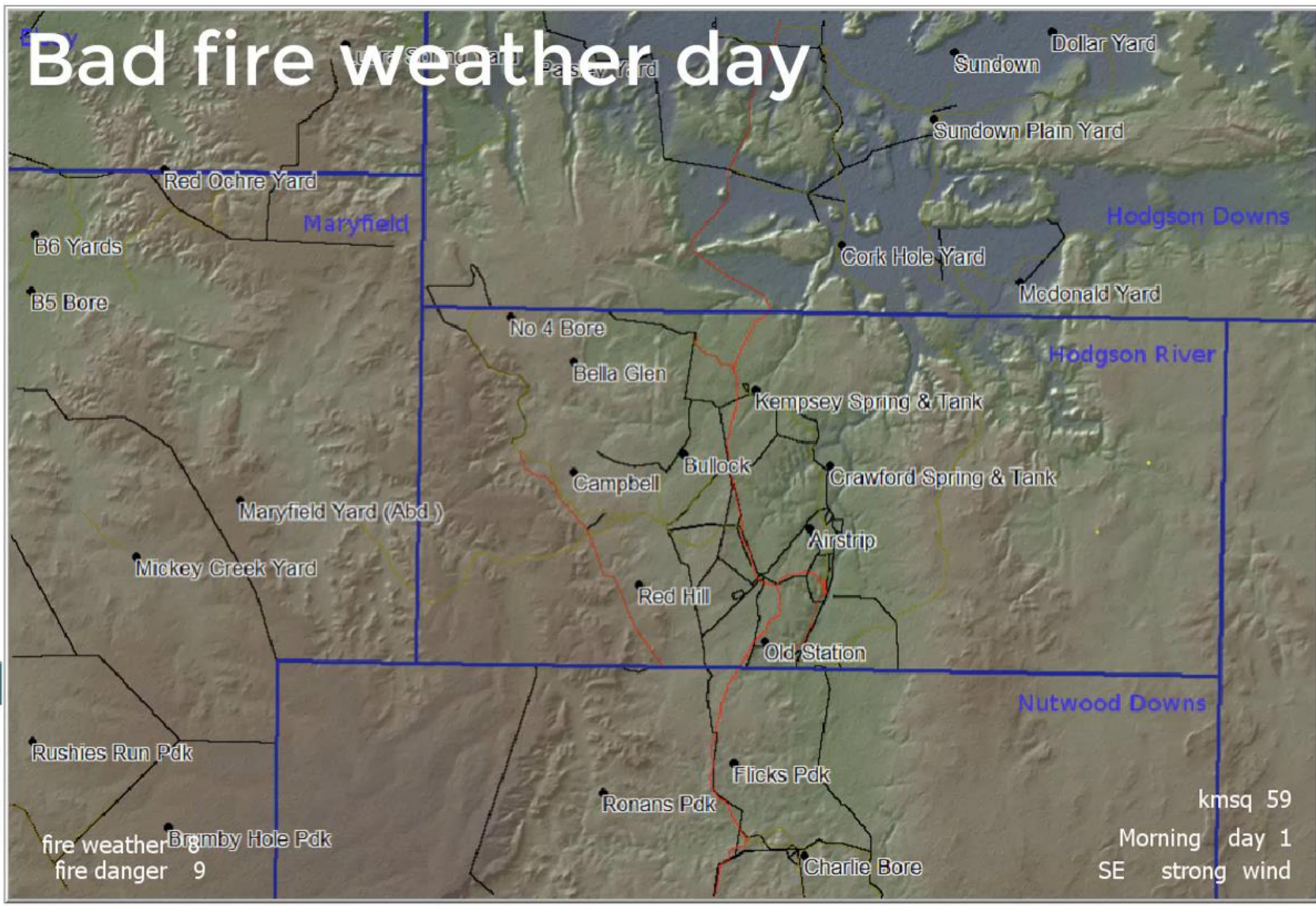
Options

On Stop-if-no-f...

On variable-wi...

On time-of-day

On just-wind



Play

Drop Incendaries 4

save-ignition 2

Ignite Saved 3 go 2

reset Save Picture

Layer View

Vegetation 5 Year Burnt 6

Places 8 YSLB+VEG 7

Roads/Fen... 9 satellite 5

Wettness W Hill Shade H

topowet Elevation E

YB 2017 Fuel Load B

monthburnt 12 viewmonth

Additional Settings

Fire Break: 2

Lightning 1

Average Burn

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Key simulation features

- **Gamification of fire simulation**
- **Supporting education, training and cross cultural and intergenerational knowledge sharing**





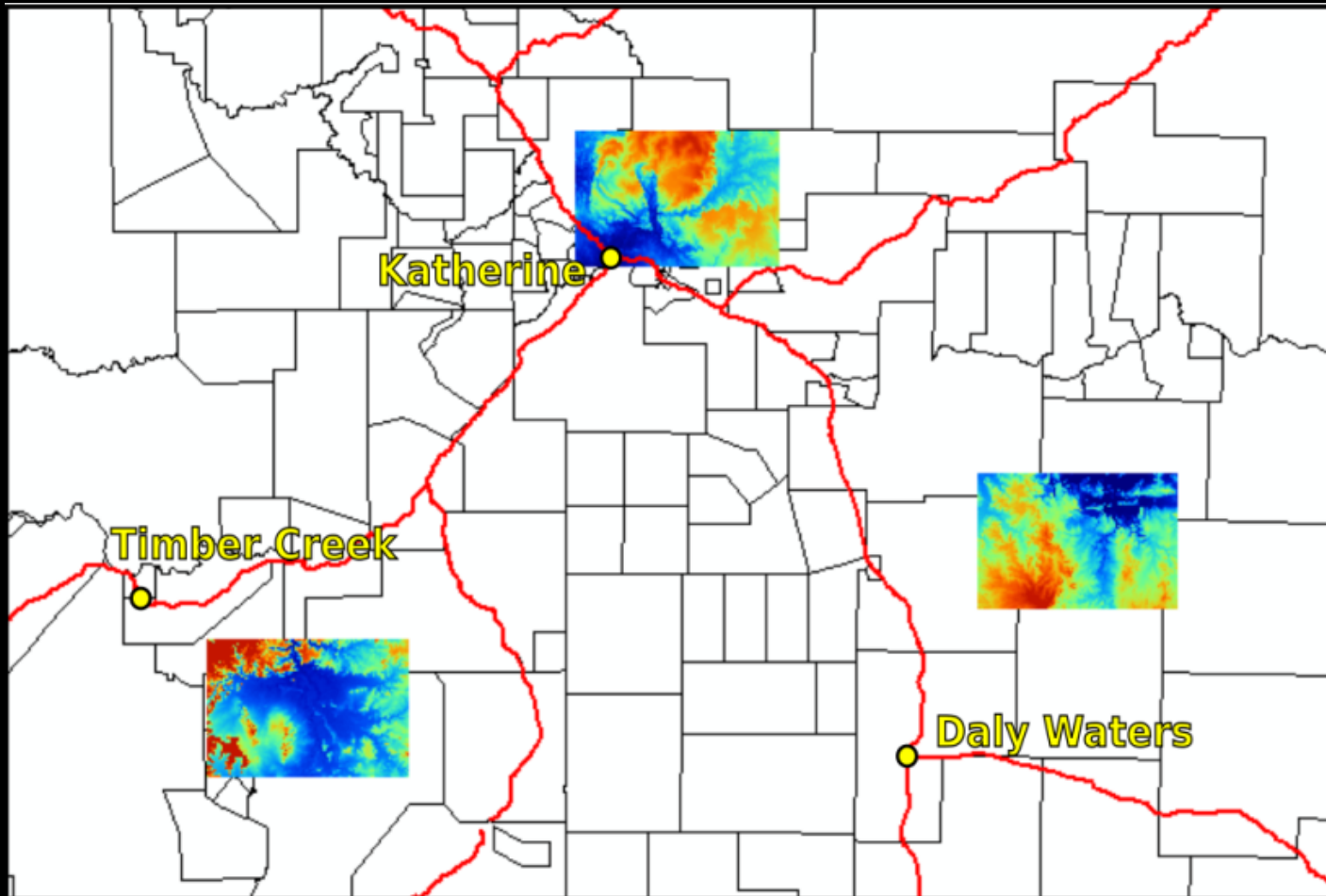
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Using sand or 3D Printed projection augments landscapes provides 3D topographic relief helps:

- **Local 3D landscapes encourage engagement**
- **Helps understand Landscape function in relation to fire**
- **Large 3D printed landscape provides very detailed landscape information.**



Regions this tool has been used in under NDRP



- Further applications with the Mimal rangers at Bulman and Dhimnuru at Gove
- Used in BNH-CRC Training Project in Arnhem Land

A 3D fire simulation showing a landscape with smoke and fire. The scene is rendered in a realistic style, with smoke rising from the ground and fire burning in the distance. The terrain is hilly and covered with sparse vegetation.

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- Next year NDRP funding to develop fire simulations for Darwin peri-urban zone.
- Looking to support fire projects across northern Australia.

More info:

incendiarysim.wordpress.com

NAFI

North Australia and Rangelands Fire Information

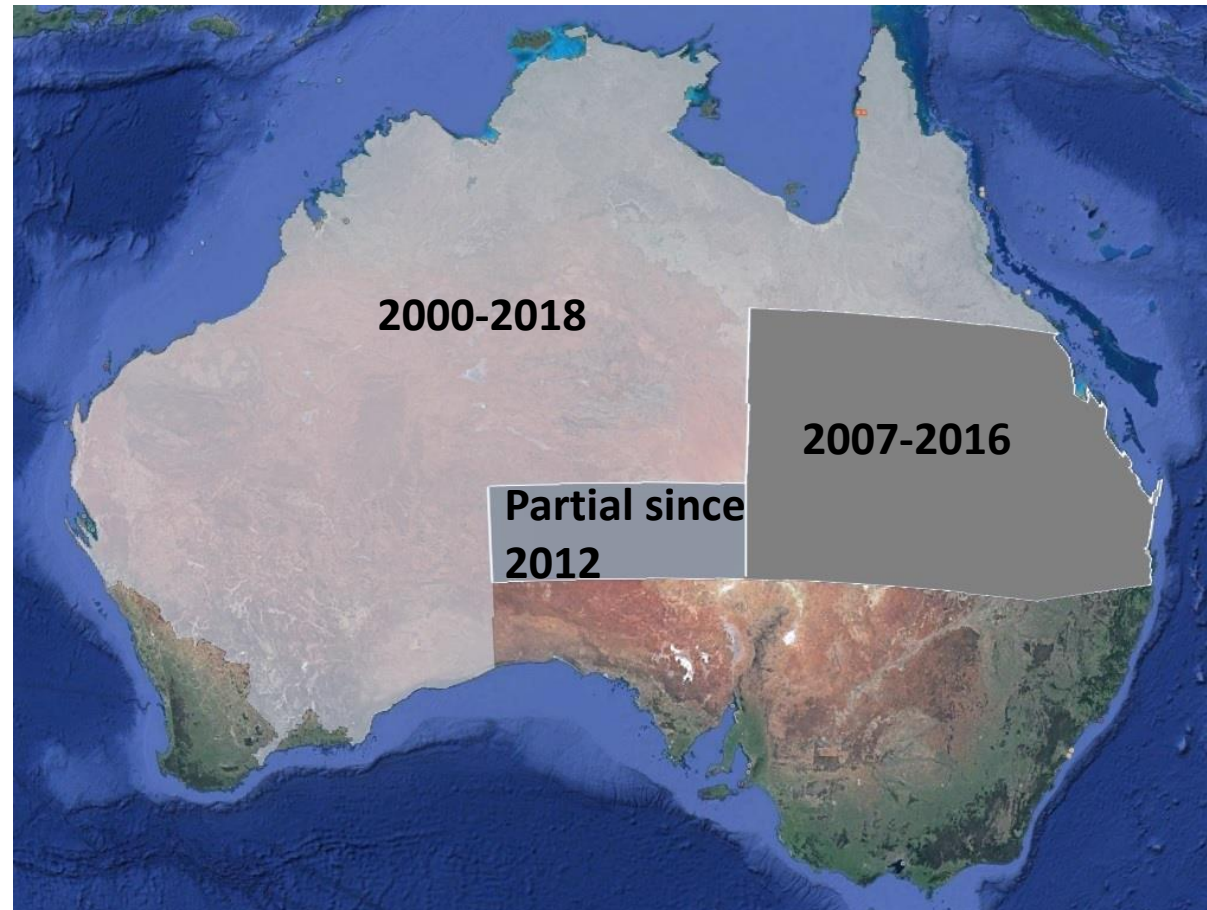
Peter Jacklyn, Darwin Centre for Bushfire Research, CDU

- **Funded until mid-2020**
- **Business case for longer term funding after that**

NAFI

North Australia and Rangelands Fire Information

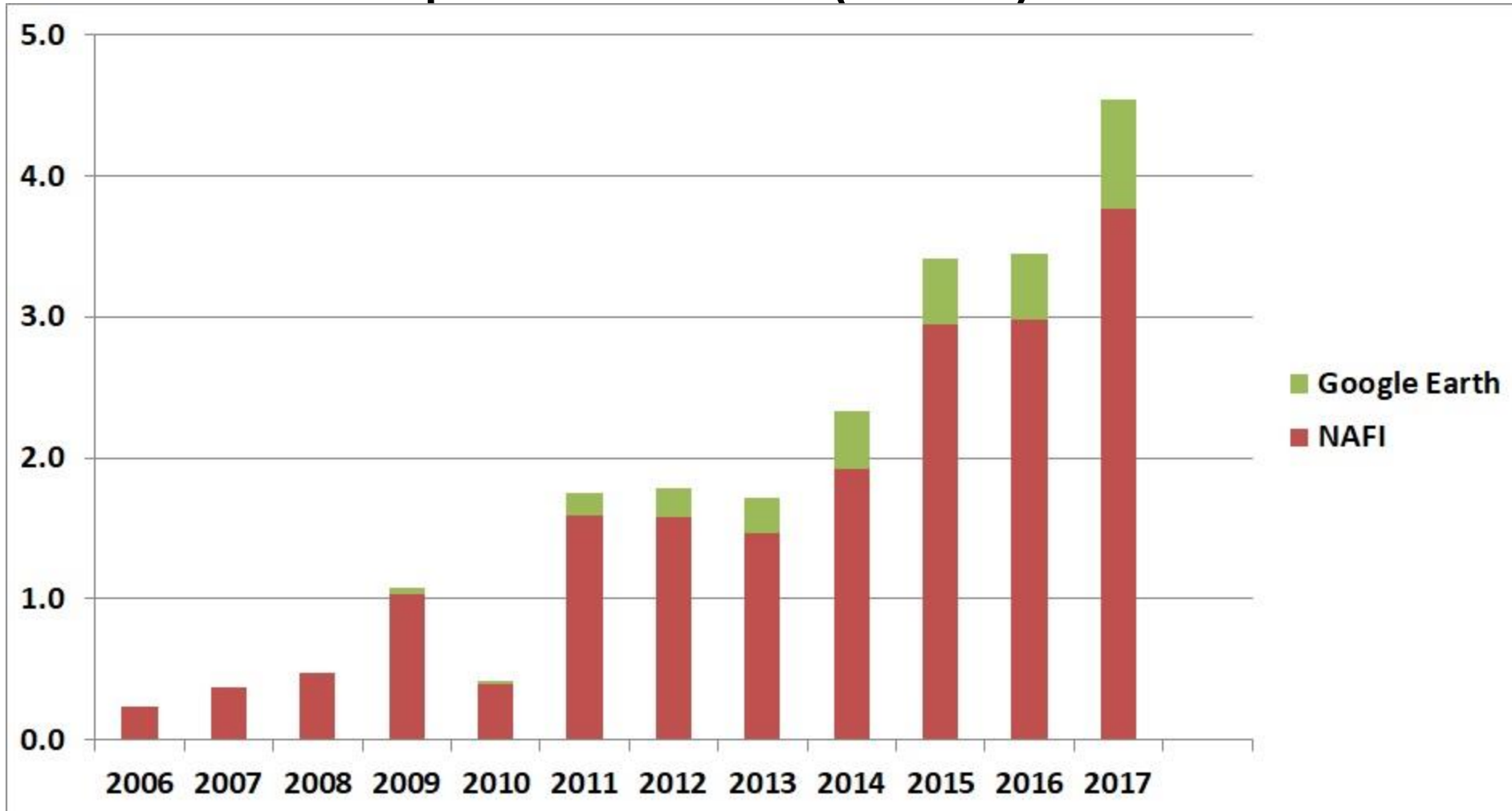
250m Fire Scar coverage in 2018



NAFI

North Australia and Rangelands Fire Information

NAFI map views since 2006 (millions)



NAFI

North Australia and Rangelands Fire Information

NAFI map views Jan – May since 2006 (millions)

