Supplementary Material

Fire and rain are one: extreme rainfall events predict wildfire extent in an arid grassland

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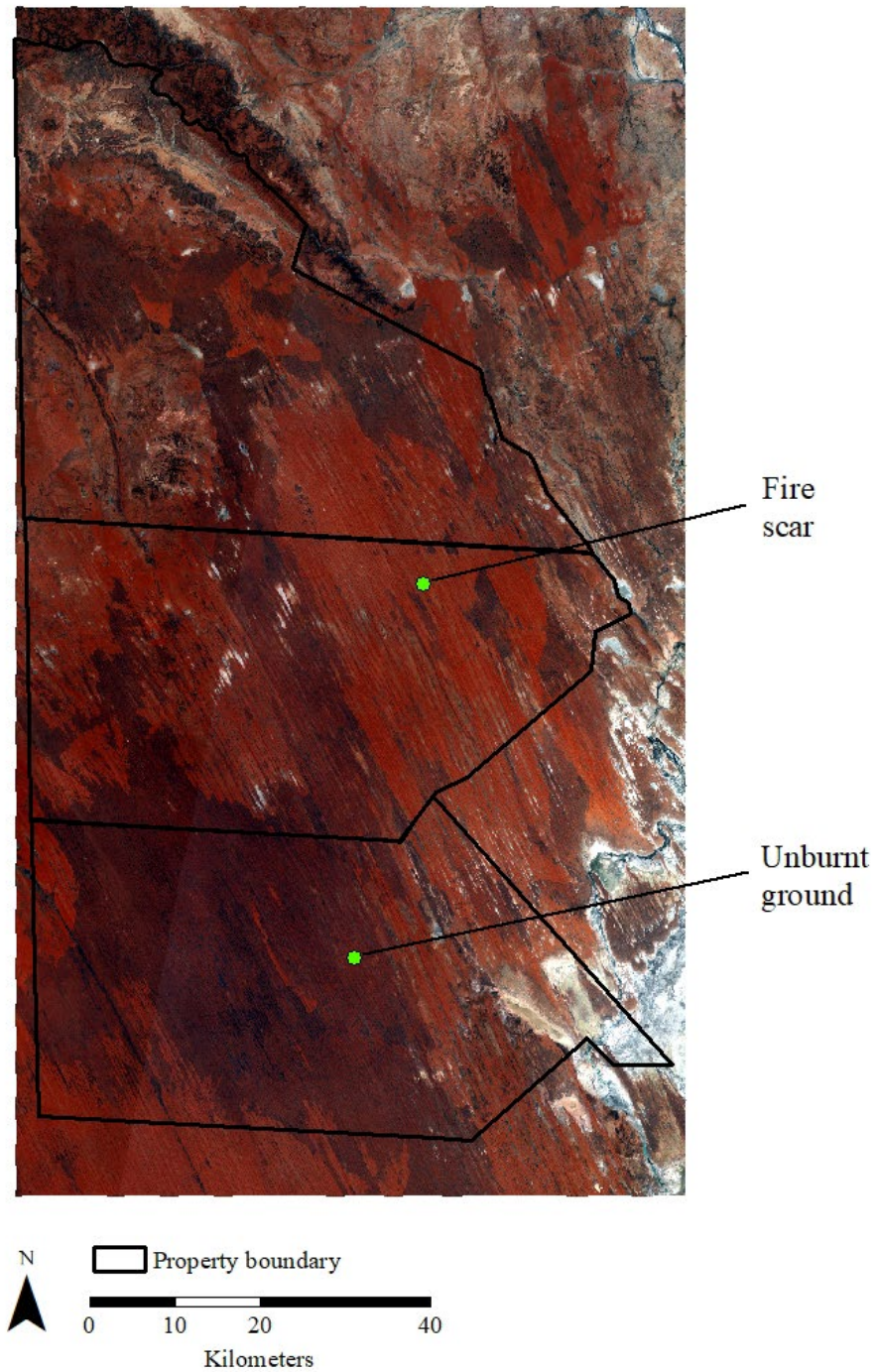[C]Corresponding author. Email: Elise.Verhoeven@student.uts.edu.au

Figures

Figure S1. Landsat 8 imagery of the north-eastern Simpson Desert, Queensland, Australia.

Fire scars (orange/red) are clearly distinguishable from the surrounding unburnt landscape
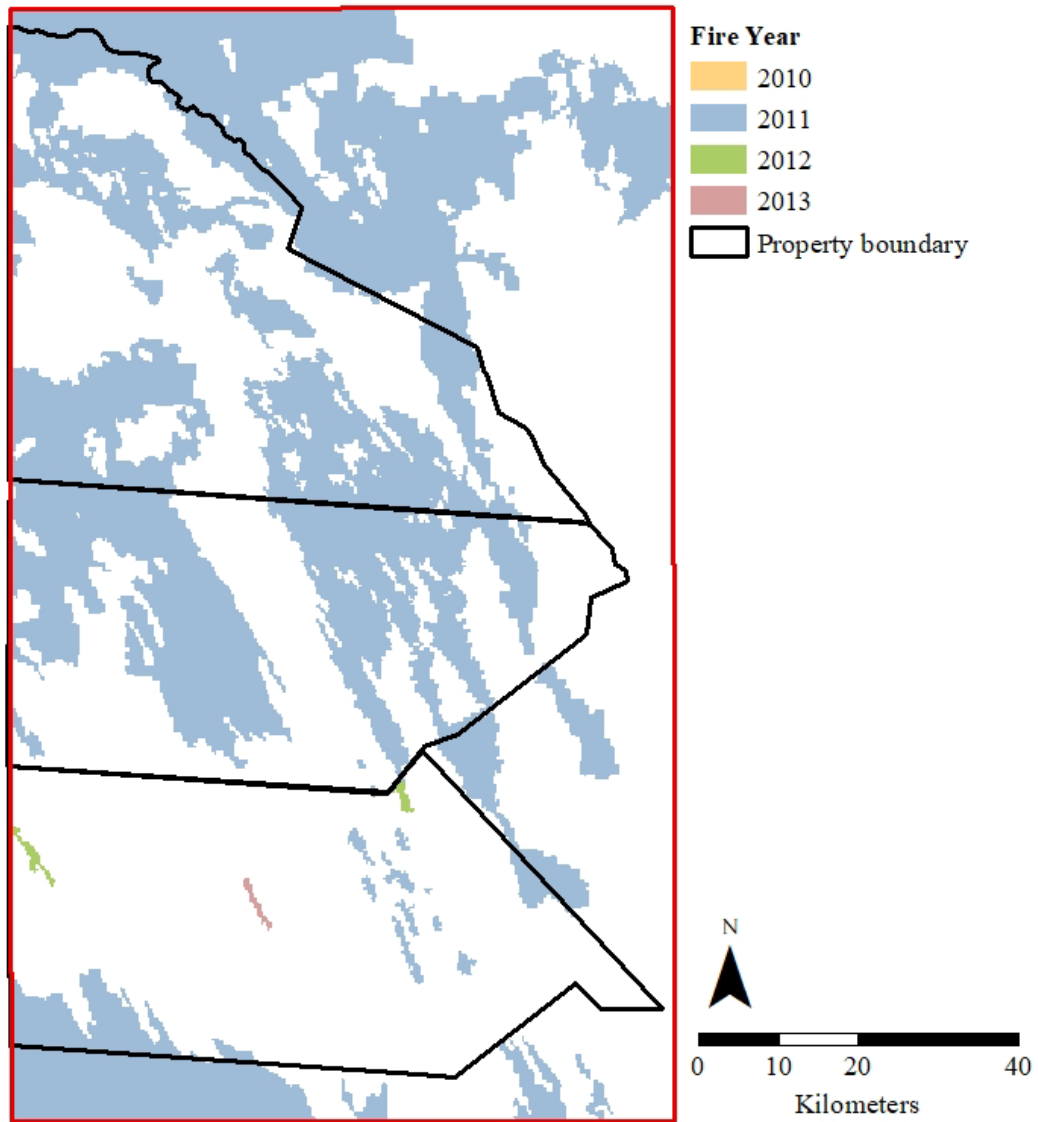
(dark green/brown areas).

Figure S2. The NAFI fire scars for wildfires in the 2010–2013 wildfire seasons within the north-east Simpson Desert, Queensland, Australia.

Tables

Table S3. The area burnt by wildfire based on maximum likelihood classification (ML), NAFI fire scar maps and the percentage of NAFI fire scars correctly identified. Study region occurred over a 10 504 km^2 area in the north-east Simpson Desert, Queensland, Australia.

	ML area (km^2)	NAFI area (km^2)	NAFI area correct (%)
2010	17	9	0
2011	2233	3722	41
2012	60	12	16
2013	4	4	46

Table S4. Top six generalized linear models for environmental variables that could predict wildfire area in the north-eastern Simpson Desert, Queensland, Australia. All variables were standardised to have a mean of 0 and standard deviation of 1. Models with delta AICc ≤ 2 were considered to have substantial support.

Model	Intercept	Rain 2yr prior	SOI 1yr prior	SOI yr of	Temp 1yr prior	Rain 2yr cumulative	Rain 1yr prior	df	logLik	AICc	delta	Weight
1	1.40	0.85						3	-92.81	192.3	0.00	0.025
2	1.40	0.83	0.43					4	-92.03	193.1	0.88	0.016
3	1.40	0.77		0.42				4	-92.1	193.3	1.02	0.015
4	1.40	0.74			-0.37			4	-92.27	193.6	1.36	0.013
5	1.40	0.75	0.46	0.45				5	-91.16	194.0	1.72	0.011
6	1.40				-0.73	1.07	-1.27	5	-91.26	194.3	2.00	0.009