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Supplementary Material

Fuel dynamics and vegetation recovery after fire in a semiarid Australian shrubland

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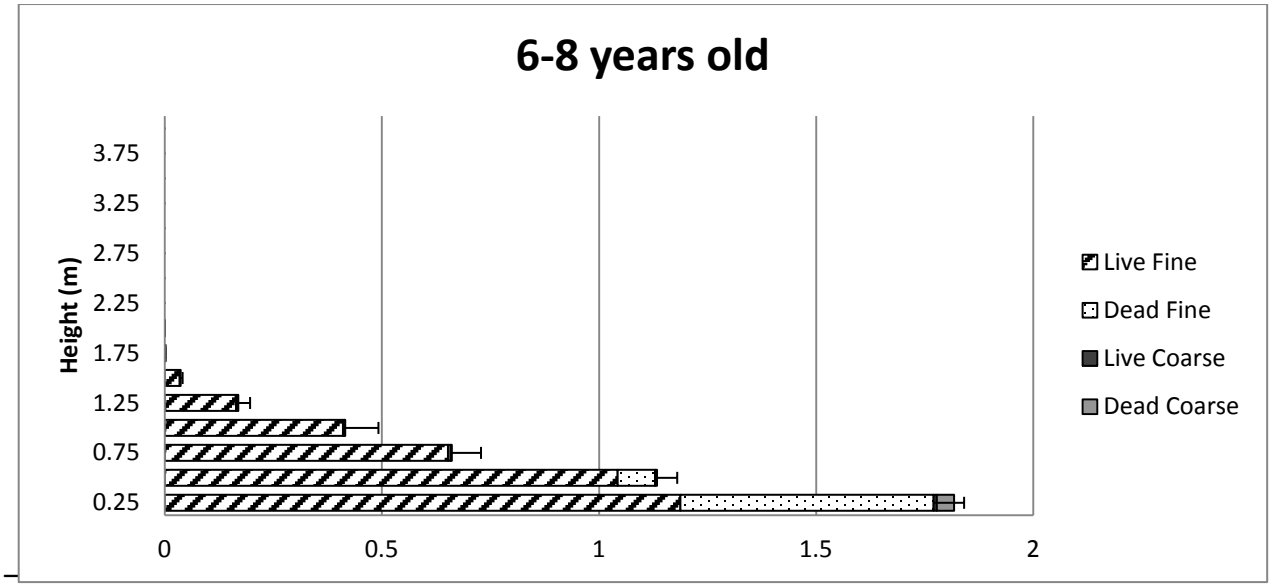
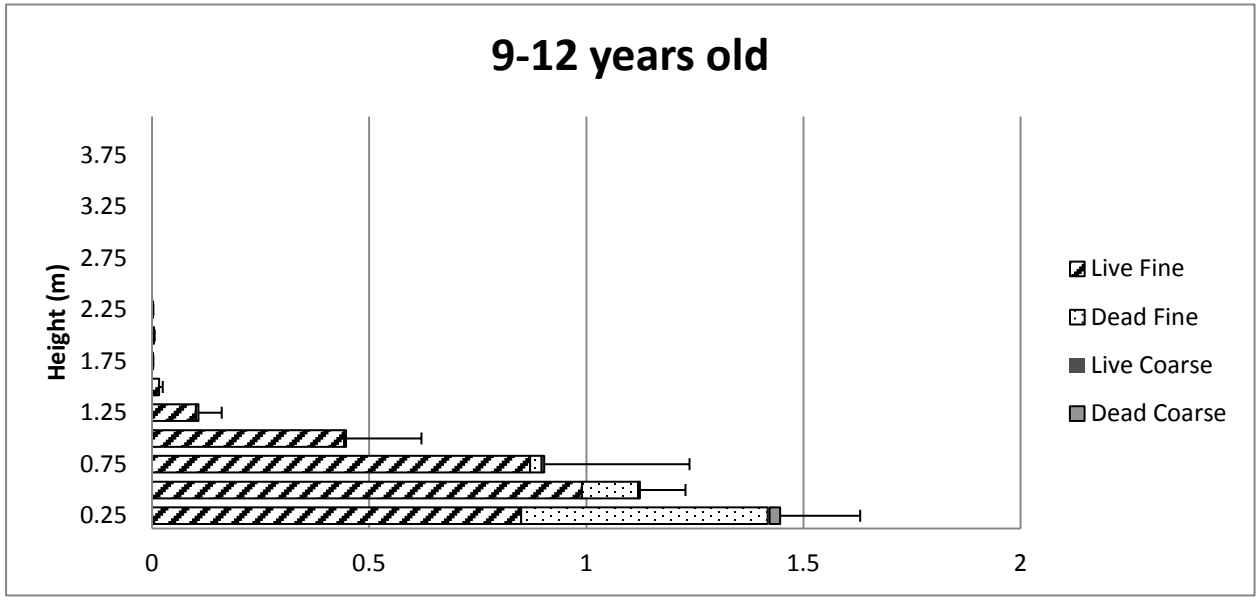
Fig. S1. Cubic fuel sampler for collection of fuel at each 25 cm level. Fuel was removed from within the frame, and was bagged for drying and weighing. (Source: S. Dalgleish)

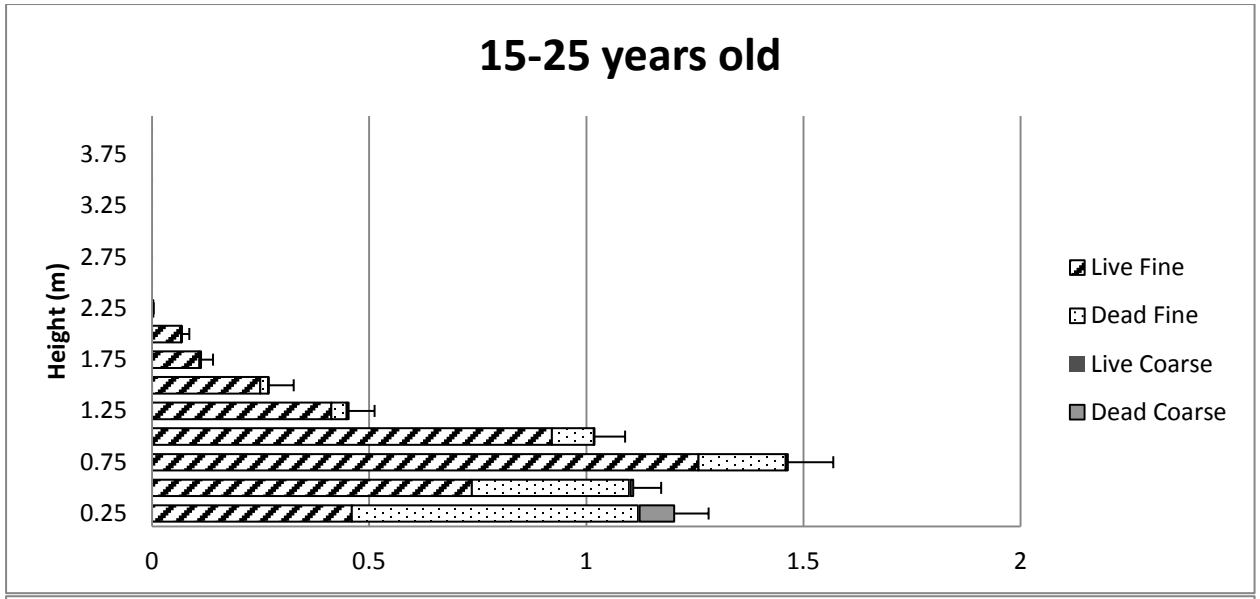
Table S1. Linear regression results for fuel variables (FV) against time since fire (TSF, in years) and soil depth (in metres)

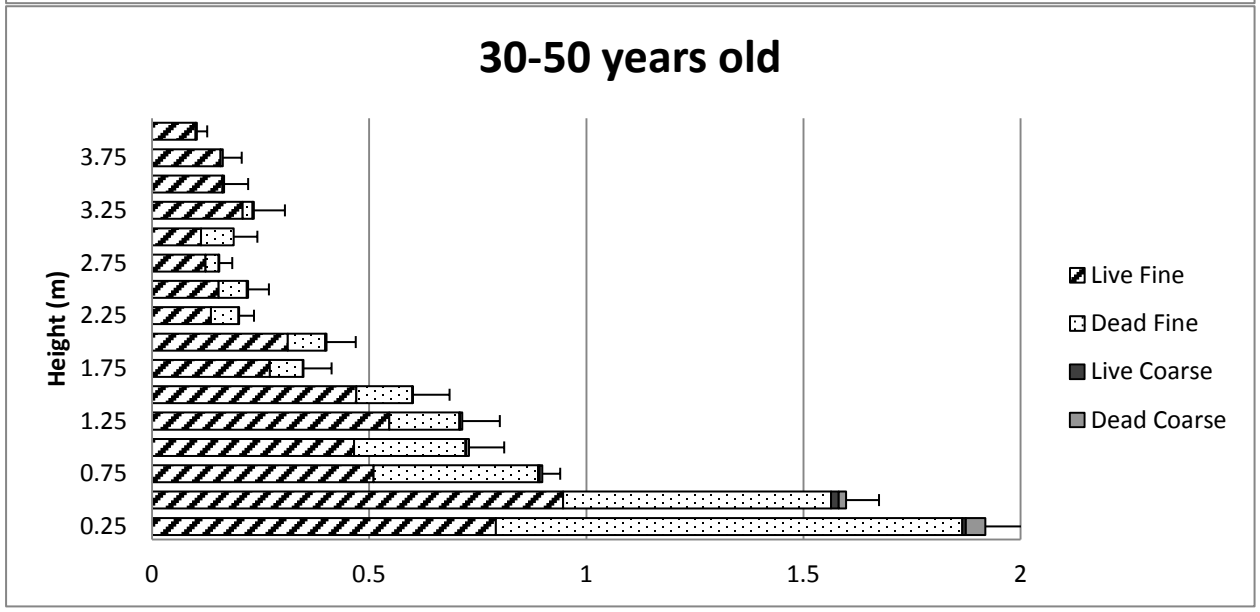
Model parameters shown are for relationship between fuel and time since fire (i.e. FV = B + β(TSF)). s.e. = standard error of parameter estimates. Coefficients of determination are shown for three models: FV *v.* TSF, FV *v.* soil depth, and FV *v.* combined effects of TSF and soil depth. Significance levels indicate results of F-test for model (i.e. significance of R^2 change when adding variable(s) to the model) and t-test for significance of model parameters against null model, with ***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$. Fine fuels represent fuel with diameter or thickness <1cm.

Fuel variable (FV)	Model parameters		Coefficients of determination: R^2 (Adj R^2)		
	B (s.e.)	β (s.e.)	TSF	Soil depth	TSF + depth
Patch size (m)	1.0 (0.2)***	0.028 (0.004)***	0.539***	0.080	0.563 (0.538)***
Interpatch size (m)	–	–	0.015	0.027	0.051 (–0.004)
% Patch cover	52.8 (2.8)***	0.36 (0.07)***	0.401***	0.061	0.421 (0.389)***
Patch/interpatch ratio	1.4 (0.6)*	0.034 (0.015)*	0.132*	0.060	0.166 (0.118)*
Patch size variability (std error)	0.001 (0.023)	0.003 (0.001)***	0.490***	0.004	0.557 (0.523)***
Live aerial fine fuel ($t\ ha^{-1}$) per site	5.66 (1.03)***	0.114 (0.027)***	0.328***	0.087	0.369 (0.334)***
Live aerial fine fuel ($t\ ha^{-1}$) within patch	10.86 (1.44)***	0.102 (0.037)**	0.167**	0.086	0.218 (0.176)*
Dead aerial fine fuel ($t\ ha^{-1}$) per site	0.35 (0.33)	0.066 (0.009)***	0.623***	0.044	0.628 (0.607)***
Dead aerial fine fuel ($t\ ha^{-1}$) within patch	1.09 (0.58)	0.077 (0.015)***	0.427***	0.039	0.448 (0.416)***
Fine litter mass ($t\ ha^{-1}$) per site	0.88 (0.49)	0.051 (0.013)***	0.307***	0.117*	0.387 (0.354)***
Total aerial fine fuel ($t\ ha^{-1}$) per site	6.19 (1.10)***	0.177 (0.028)***	0.524***	0.104*	0.563 (0.538)***
Total fine fuel ($t\ ha^{-1}$) per site	6.86 (1.31)***	0.231 (0.034)***	0.555***	0.126*	0.608 (0.587)***


6-8 years old
Height (m)
3.75
3.25
2.75
2.25
1.75
1.25
0.75
0.25
0
0.5
1
1.5
2
Live Fine
Dead Fine
Live Coarse
Dead Coarse


9-12 years old
Height (m)
3.75
3.25
2.75
2.25
1.75
1.25
0.75
0.25
0
0.5
1
1.5
2
Live Fine
Dead Fine
Live Coarse
Dead Coarse


15-25 years old
Height (m)
3.75
3.25
2.75
2.25
1.75
1.25
0.75
0.25
0
0.5
1
1.5
2
Live Fine
Dead Fine
Live Coarse
Dead Coarse


30-50 years old
Height (m)
3.75
3.25
2.75
2.25
1.75
1.25
0.75
0.25
0
0.5
1
1.5
2
Live Fine
Dead Fine
Live Coarse
Dead Coarse

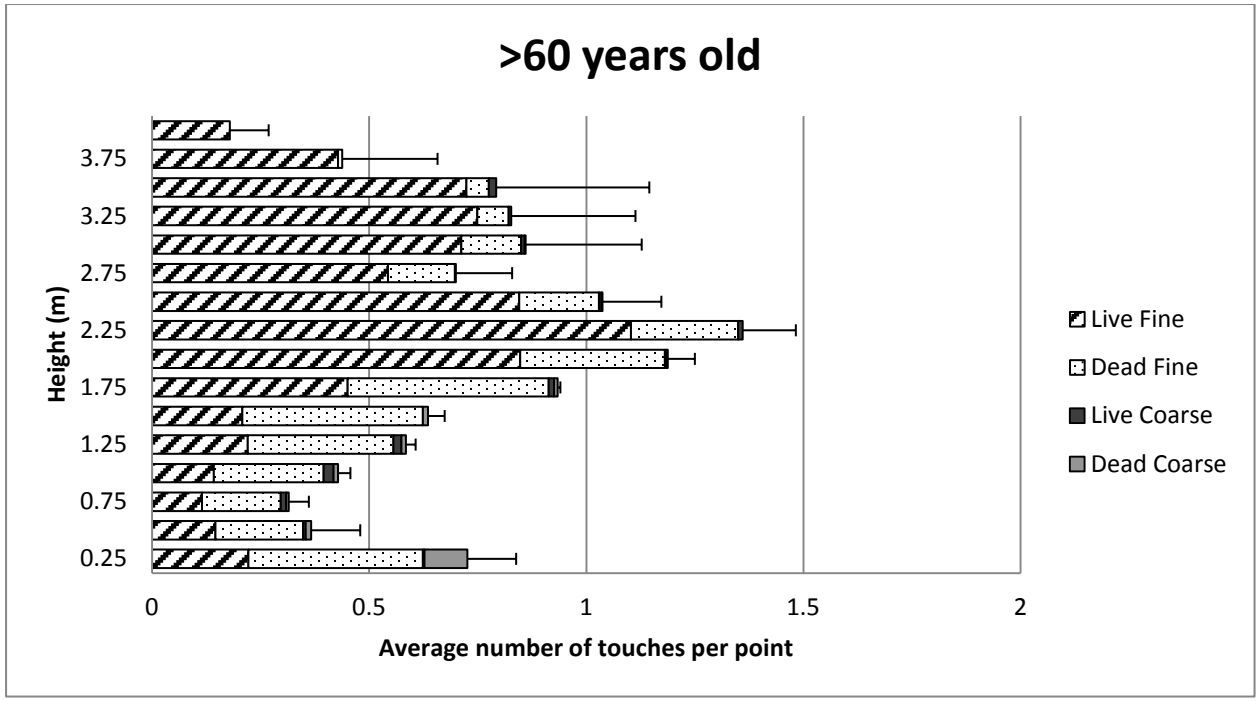


Fig. S2. Vertical distribution of vegetation density (measured as average number of touches using a Levy pole) for fire age classes. Total average touches are divided into type of plant material: dead or alive, and fine (=<1cm diameter) or coarse (>1cm). Error bars are +1S.E. for total average touches based on inter-site variation (n = 3, except for 6–8 y.o. and 15–25 y.o., where n = 4).


Age Class: 14-18yrs (n = 1995)
Age Class: 24-40yrs (n = 1985)
Age Class: 8-11yrs (n = 2001)
Age Class: <7yrs (n = 2002)
Age Class: >40yrs (n = 40++)
Distance along transect (m)

Fig. S3. An example of cross-section of vegetation structure for a representative site for each age class. Dark shaded zones indicate where vegetation was present while lightly shaded zones are where vegetation is absent (below canopy) as indicated by Levy pole touches. Vertical scale is 25 cm height intervals, while horizontal scale is distance along transect (m). (Note: n refers to year of last fire at site.)