

ONLINE APPENDIX 1

TABLE 1: Details of model specifications for the MCMCglmm analyses of tree, grass and forb richness, structural responses of various tree species and cover of various grass species.

Species / Functional group	Vegetation	Response	Fixed	Random	Nitt	Burnin	Thin	Error distr	link	Slice	Prior
Tree, grass and forb richness											
Grasses	Mopane	SR	Zone * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Grasses	Mopane	SR	E.Dung * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Grasses	Mopane	SR	H.Dung * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Forbs	Mopane	SR	Zone * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Forbs	Mopane	SR	E.Dung * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Forbs	Mopane	SR	H.Dung * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Poisson ("poisson")	Log	True	IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Trees	Mopane	SR	Zone * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Trees	Mopane	SR	E.Dung * Fire.freq	LT:Zone:ST	1.5e+06	3e+05	300	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Trees	Mopane	SR	H.Dung * Fire.freq	LT:Zone:ST	1.5e+06	3e+05	300	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 00)
Grasses	Sandveld	SR	Zone * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Grasses	Sandveld	SR	E.Dung * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Grasses	Sandveld	SR	H.Dung * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Forbs	Sandveld	SR	Zone * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Forbs	Sandveld	SR	E.Dung * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=8, nu=0.002, alpha.mu=0, alpha.V=1 000)
Forbs	Sandveld	SR	H.Dung * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Trees	Sandveld	SR	Zone * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=4, nu=0.002, alpha.mu=0, alpha.V=1 000)
Trees	Sandveld	SR	E.Dung * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002)

											G-structure: Pr(σ^2) ~ IW(V=4, nu=0.002, alpha.mu=0, alpha.V=1 000)
Trees	Sandveld	SR	H.Dung * Fire.freq	LT:Zone:ST	1.5e+06	3e+05	300	Poisson ("poisson")	Log	True	R-structure: Pr(σ^2) ~ IW(V=3, nu=0.002) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Structural responses of tree species											
<i>C. mopane</i>	Mopane	Count	Zone * HC * Fire.freq	LT:Zone:ST + LT:Zone:ST:S_Point	5e+05	1e+05	100	Binary ("categorical")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>C. mopane</i>	Mopane	Count	E.Dung * HC * Fire.freq	LT:Zone:ST + LT:Zone:ST:S_Point	5e+05	1e+05	100	Binary ("categorical")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>C. mopane</i>	Mopane	Count	H.Dung * HC * Fire.freq	LT:Zone:ST + LT:Zone:ST:S_Point	5e+05	1e+05	100	Binary ("categorical")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>P. nelsii</i>	Sandveld	Count	Zone * HC * Fire.freq	LT:Zone:ST + LT:Zone:ST:S_Point	1e+06	2e+05	200	Binary ("categorical")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>P. nelsii</i>	Sandveld	Count	E.Dung * HC * Fire.freq	LT:Zone:ST + LT:Zone:ST:S_Point	5e+05	1e+05	100	Binary ("categorical")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>P. nelsii</i>	Sandveld	Count	H.Dung * HC * Fire.freq	LT:Zone:ST + LT:Zone:ST:S_Point	5e+05	1e+05	100	Binary ("categorical")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>T. sericea</i>	Sandveld	Count	Zone * HC * Fire.freq	LT:Zone:ST + LT:Zone:ST:S_Point	1e+06	2e+05	200	Binary ("categorical")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>T. sericea</i>	Sandveld	Count	E.Dung * HC * Fire.freq	LT:Zone:ST + LT:Zone:ST:S_Point	1e+06	2e+05	200	Binary ("categorical")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>T. sericea</i>	Sandveld	Count	H.Dung * HC * Fire.freq	LT:Zone:ST + LT:Zone:ST:S_Point	1e+06	2e+05	200	Binary ("categorical")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
Cover of grass species											
<i>A. adscensionis</i>	Mopane	% Cover	Zone * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	False	R-structure: Pr(σ^2) ~ IW(V=1, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002)
<i>A. adscensionis</i>	Mopane	% Cover	E.Dung * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	False	R-structure: Pr(σ^2) ~ IW(V=1, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002)
<i>A. adscensionis</i>	Mopane	% Cover	H.Dung * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	False	R-structure: Pr(σ^2) ~ IW(V=1, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002)
<i>A. scabrivalvis</i>	Mopane	% Cover	Zone * Fire.freq	LT:Zone:ST	4e+06	8e+05	800	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>A. scabrivalvis</i>	Mopane	% Cover	E.Dung * Fire.freq	LT:Zone:ST	4e+06	8e+05	800	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>A. scabrivalvis</i>	Mopane	% Cover	H.Dung * Fire.freq	LT:Zone:ST	3e+06	6e+05	600	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>A. stipitata</i>	Sandveld	% Cover	Zone * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=5, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002)
<i>A. stipitata</i>	Sandveld	% Cover	E.Dung * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=5, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002)
<i>A. stipitata</i>	Sandveld	% Cover	H.Dung * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=5, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002)
<i>D. giganteum</i>	Sandveld	% Cover	Zone * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=5, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>D. giganteum</i>	Sandveld	% Cover	E.Dung * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=5, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)

<i>P. fleckii</i>	Sandveld	% Cover	H.Dung * Fire.freq	LT:Zone:ST	4e+06	8e+05	800	Binomial ("multinomial2")	logit	False	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002)
<i>S. pappophoroides</i>	Mopane	% Cover	Zone * Fire.freq	LT:Zone:ST	2e+06	4e+05	400	Binomial ("multinomial2")	logit	False	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002)
<i>S. pappophoroides</i>	Mopane	% Cover	E.Dung * Fire.freq	LT:Zone:ST	3.5e+06	7e+05	700	Binomial ("multinomial2")	logit	False	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002)
<i>S. pappophoroides</i>	Mopane	% Cover	H.Dung * Fire.freq	LT:Zone:ST	6.5e+06	1.3e+06	1 300	Binomial ("multinomial2")	logit	False	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002)
<i>U. trichopus</i>	Mopane	% Cover	Zone * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=5, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>U. trichopus</i>	Mopane	% Cover	E.Dung * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>U. trichopus</i>	Mopane	% Cover	H.Dung * Fire.freq	LT:Zone:ST	3e+06	6e+05	600	Binomial ("multinomial2")	logit	True	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>U. trichopus</i>	Sandveld	% Cover	Zone * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	False	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>U. trichopus</i>	Sandveld	% Cover	E.Dung * Fire.freq	LT:Zone:ST	5e+05	1e+05	100	Binomial ("multinomial2")	logit	False	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)
<i>U. trichopus</i>	Sandveld	% Cover	H.Dung * Fire.freq	LT:Zone:ST	1e+06	2e+05	200	Binomial ("multinomial2")	logit	False	R-structure: Pr(σ^2) ~ IW(V=10, fix=1) G-structure: Pr(σ^2) ~ IW(V=1, nu=0.002, alpha.mu=0, alpha.V=1 000)

SR, species richness; LT, large transect; ST, small transect; E.Dung, elephant dung; H.Dung, herbivore dung; HC, height class.

TABLE 2: Markov chain Monte Carlo analyses (Hadfield 2010) of the relationship between the height structure of the three most dominant tree species of the study area and distance zone from permanent water. Posterior means, 95% confidence intervals and *p*-values (< 0.05 in bold).

Variable	<i>C. mopane</i>				<i>P. nelsii</i>				<i>T. sericea</i>			
	Posterior mean	Lower 95% CI	Upper 95% CI	pMCMC	Posterior mean	Lower 95% CI	Upper 95% CI	pMCMC	Posterior mean	Lower 95% CI	Upper 95% CI	pMCMC
<u>Zone*HC*Fire</u>												
(Intercept)	2.2261	0.6188	3.7880	0.0055	-2.3645	-3.8625	-0.8248	0.0030	-6.9271	-9.0419	-4.9130	<3e-04
Zone10-15	-0.2987	-2.7778	2.3486	0.8155	1.7377	-0.5605	4.3339	0.1680	4.3126	1.6243	7.3326	0.0040
Zone>20	-1.2569	-3.6937	1.1789	0.3165	1.9999	-0.5030	4.3027	0.1070	4.3369	1.5232	7.2139	0.0020
HC2	1.6663	0.4502	2.8111	0.0045	1.6400	0.4933	2.7082	0.0010	1.6535	-0.2349	3.4264	0.0805
HC3	2.8449	1.5395	4.1123	<3e-04	1.4839	0.3087	2.5929	0.0110	0.8191	-1.1809	2.6525	0.3955
HC4	2.8837	1.6316	4.2018	<3e-04	0.4340	-0.7042	1.5210	0.4630	-4.3282	-8.3248	-0.5237	0.0240
Fire	-0.1375	-1.2325	1.0328	0.8055	0.2541	-0.7602	1.2726	0.6320	1.6796	0.3398	2.9725	0.0085
Zone10-15:HC2	1.1021	-0.6671	3.0582	0.2560	0.4766	-1.4053	2.2412	0.6060	-1.0550	-3.4001	1.2315	0.3930
Zone>20:HC2	1.2989	-0.5596	3.2587	0.1860	0.1343	-1.6104	1.7836	0.8800	-1.4818	-3.9068	0.8014	0.2315
Zone10-15:HC3	0.1912	-1.6705	2.2099	0.8495	-0.9133	-2.6077	0.9614	0.3200	0.9574	-1.4824	3.3960	0.4325
Zone>20:HC3	0.9493	-0.8621	2.9910	0.3530	-0.3780	-2.0112	1.4195	0.6655	-0.4371	-2.6120	2.1597	0.7180
Zone10-15:HC4	0.7111	-1.1900	2.6510	0.4565	-2.3549	-4.1997	-0.4743	0.0190	6.4833	2.4045	10.7451	0.0020
Zone>20:HC4	2.7973	0.6640	4.8759	0.0080	-4.1166	-6.0733	-2.3462	<3e-04	6.3842	2.1755	10.3866	0.0015
Zone10-15:Fire	-0.3713	-2.1868	1.1925	0.6685	-0.3844	-1.9563	1.0254	0.6155	-1.2542	-2.9529	0.4893	0.1575
Zone>20:Fire	0.5887	-0.9456	2.0489	0.4610	0.0493	-1.3020	1.4034	0.9405	-2.0950	-3.7126	-0.4946	0.0095
HC2:Fire	0.9772	0.0955	1.7873	0.0230	-0.0210	-0.8233	0.7183	0.9600	0.0640	-1.0716	1.2005	0.9250
HC3:Fire	1.0827	0.1685	2.1191	0.0280	0.0356	-0.7477	0.8605	0.9295	-0.8503	-2.0970	0.3619	0.1735
HC4:Fire	2.4262	1.0732	3.8303	<3e-04	-0.9277	-1.7606	-0.2088	0.0130	-1.0718	-3.8899	1.7722	0.4590
Zone10-15:HC2:Fire	-0.8881	-2.0865	0.3871	0.1620	-0.6758	-1.8390	0.4273	0.2405	0.1544	-1.2753	1.4913	0.8340
Zone>20:HC2:Fire	-0.6054	-1.7509	0.7152	0.3235	-0.4147	-1.4181	0.5389	0.4070	0.2364	-1.2424	1.4206	0.7085
Zone10-15:HC3:Fire	-1.5039	-2.8516	-0.2583	0.0250	-0.7837	-1.8899	0.3806	0.1750	1.0896	-0.3956	2.4768	0.1460
Zone>20:HC3:Fire	-1.6457	-2.8374	-0.3509	0.0095	-0.9915	-1.9832	0.0584	0.0575	1.9708	0.5717	3.4113	0.0075
Zone10-15:HC4:Fire	-3.6659	-5.3523	-2.1308	<3e-04	-0.4369	-1.7510	0.7822	0.5060	1.0954	-1.7890	4.0967	0.4725
Zone>20:HC4:Fire	-3.6798	-5.2591	-2.0740	<3e-04	0.4652	-0.5454	1.5203	0.3965	2.4032	-0.3377	5.5212	0.0910
<u>E.Dung*HC*Fire</u>												
(Intercept)	1.6128	0.3157	2.8483	0.0145	-0.7338	-2.0728	0.5588	0.2625	-3.8788	-5.5479	-2.0735	<3e-04
E.Dung	0.0049	-0.0660	0.0717	0.8795	-0.0520	-0.1152	0.0067	0.0880	-0.0302	-0.1084	0.0514	0.4640
HC2	2.8250	1.8404	3.8460	<3e-04	1.7703	0.7409	2.6642	<3e-04	-0.6947	-1.8693	0.4948	0.2590

HC3	2.7622	1.7279	3.8821	<3e-04	0.8023	-0.1955	1.7328	0.1080	-0.3764	-1.5281	0.8207	0.5415
HC4	4.5958	3.6213	5.6806	<3e-04	-1.5273	-2.5424	-0.5210	0.0035	1.4563	0.1818	2.7211	0.0240
Fire	0.3830	-0.4100	1.2080	0.3535	0.3157	-0.3850	1.1090	0.4050	0.8492	-0.1866	1.7544	0.0785
E.Dung:HC2	-0.0355	-0.0873	0.0108	0.1635	0.0066	-0.0365	0.0556	0.7695	0.1042	0.0442	0.1621	0.0015
E.Dung:HC3	0.0582	-0.0094	0.1400	0.1075	0.0363	-0.0120	0.0839	0.1405	0.0708	0.0112	0.1287	0.0210
E.Dung:HC4	-0.0570	-0.1079	-0.0076	0.0295	0.0321	-0.0132	0.0816	0.1845	-0.1020	-0.1771	-0.0253	0.0065
E.Dung:Fire	-0.0551	-0.1090	0.0032	0.0550	0.0068	-0.0256	0.0406	0.6930	-0.0177	-0.0635	0.0293	0.4595
HC2:Fire	0.0028	-0.6019	0.6648	0.9925	-0.6830	-1.2297	-0.1132	0.0155	0.4593	-0.1979	1.1340	0.1865
HC3:Fire	-0.4934	-1.1236	0.1647	0.1315	-1.1757	-1.7463	-0.6205	0.0005	0.8330	0.1613	1.4999	0.0100
HC4:Fire	-1.5513	-2.1669	-0.9247	<3e-04	-2.0021	-2.6187	-1.3785	<3e-04	0.7443	0.0548	1.4714	0.0445
E.Dung:HC2:Fire	0.0547	0.0119	0.0962	0.0090	0.0156	-0.0100	0.0413	0.2375	-0.0204	-0.0554	0.0171	0.2645
E.Dung:HC3:Fire	0.0539	-0.0009	0.1040	0.0445	0.0219	-0.0061	0.0492	0.1250	-0.0141	-0.0487	0.0241	0.4400
E.Dung:HC4:Fire	0.1260	0.0749	0.1730	<3e-04	0.0414	0.0138	0.0670	0.0030	0.0208	-0.0240	0.0633	0.3500
H.Dung*HC*Fire												
(Intercept)	1.5377	0.4324	2.7127	0.0095	-1.1936	-2.2524	-0.1247	0.0285	-3.8049	-5.1699	-2.4620	<3e-04
H.Dung	0.2048	-0.2721	0.7361	0.4105	0.0373	-0.2906	0.3801	0.8240	-0.4226	-0.8830	0.0816	0.0735
HC2	2.6708	1.8442	3.6278	<3e-04	1.4553	0.6333	2.2345	0.0005	1.0884	0.1870	2.0704	0.0260
HC3	2.9818	2.0997	3.8484	<3e-04	0.5644	-0.2604	1.3722	0.1690	1.5015	0.5075	2.4635	0.0010
HC4	4.1615	3.3063	5.1903	<3e-04	-2.1422	-3.0891	-1.3035	<3e-04	1.8439	0.8954	2.8593	0.0005
Fire	0.0463	-0.6289	0.7542	0.9060	0.3838	-0.1475	0.9745	0.1755	0.3071	-0.3634	1.0247	0.3940
H.Dung:HC2	-0.3347	-0.7021	0.0176	0.0635	0.1281	-0.1261	0.3846	0.3220	-0.9479	-1.6166	-0.3185	0.0025
H.Dung:HC3	0.1057	-0.3130	0.4801	0.5995	0.4149	0.1442	0.6960	0.0020	-0.8425	-1.6937	-0.0337	0.0250
H.Dung:HC4	-0.3692	-0.7182	-0.0204	0.0405	0.5809	0.3106	0.8366	<3e-04	-0.5327	-1.4267	0.1824	0.1455
H.Dung:Fire	-0.1066	-0.4071	0.1685	0.4615	-0.3269	-0.6636	0.0063	0.0500	0.4452	0.0011	0.8542	0.0335
HC2:Fire	0.3770	-0.1907	0.8891	0.1905	-0.3209	-0.7385	0.1006	0.1430	-0.0171	-0.5169	0.4411	0.9305
HC3:Fire	0.1054	-0.4286	0.6207	0.7060	-0.5573	-0.9755	-0.1082	0.0085	0.4232	-0.0829	0.9151	0.0965
HC4:Fire	-0.6084	-1.1344	-0.0570	0.0230	-0.8229	-1.2911	-0.3239	0.0010	0.6197	0.1243	1.0766	0.0100
H.Dung:HC2:Fire	0.1292	-0.0809	0.3624	0.2485	0.1084	-0.1418	0.3726	0.4075	0.7611	0.2388	1.2343	0.0015
H.Dung:HC3:Fire	-0.1809	-0.3965	0.0180	0.0850	-0.1030	-0.3640	0.1850	0.4645	0.0147	-0.4877	0.5896	0.9995
H.Dung:HC4:Fire	0.0713	-0.1194	0.2747	0.4935	-0.3416	-0.6694	-0.0464	0.0295	-1.3484	-2.1390	-0.4904	0.0065

TABLE 3: Grass cover responses. Posterior means, 95% confidence intervals and *p*-values (< 0.05 in bold).

Variable	Mopane											
	Posterior mean	Lower 95% CI	Upper 95% CI	pMCMC	Posterior mean	Lower 95% CI	Upper 95% CI	pMCMC	Posterior mean	Lower 95% CI	Upper 95% CI	pMCMC
Zone*Fire	<i>A. adscensionis</i>				<i>A. scabrivalvis</i>				<i>D. eriantha</i>			
Intercept	-2.2495	-3.1333	-1.2788	<3e-04	-7.9453	-11.8276	-4.6602	<3e-04	-14.0855	-18.4713	-9.8206	<3e-04
Zone10-15	0.7943	-0.7819	2.2699	0.2900	-7.8936	-14.0543	-1.8578	0.0080	2.5623	-2.9565	9.0365	0.3650
Zone>20	0.3081	-1.2021	1.6975	0.6760	-12.7283	-21.0149	-5.0382	0.0005	0.9668	-6.4795	7.6192	0.7590
Fire	-0.0704	-0.6978	0.5851	0.8180	-0.6838	-3.5139	2.1231	0.6435	2.4730	0.2796	4.8049	0.0310
Zone10-15:Fire	-0.2625	-1.2654	0.7085	0.6020	5.6909	1.6800	9.7595	0.0020	-3.8900	-8.3730	-0.1132	0.0420
Zone>20:Fire	-0.1045	-0.9803	0.8334	0.8070	4.5764	0.3134	8.6796	0.0205	-5.0571	-10.9188	-0.3292	0.0265
E.Dung*Fire												
Intercept	-1.4010	-2.1331	-0.7436	<3e-04	-14.5772	-19.0835	-10.5336	<3e-04	-13.5594	-17.4326	-10.0884	<3e-04
E.Dung	-0.0513	-0.0907	-0.0129	0.0100	0.1236	-0.0546	0.3026	0.1610	0.0221	-0.1428	0.1765	0.7500
Fire	-0.3452	-0.8076	0.0808	0.1340	2.8234	0.7040	5.1027	0.0090	-0.5922	-2.8295	1.3718	0.5670
E.Dung:Fire	0.0139	-0.0181	0.0432	0.3720	-0.0787	-0.2342	0.0747	0.3040	0.0913	-0.0255	0.2134	0.0955
H.Dung*Fire												
Intercept	-1.6484	-2.2972	-1.0314	<3e-04	-13.5936	-17.4143	-9.8709	<3e-04	-13.5234	-17.6202	-10.1362	<3e-04
H.Dung	-0.3058	-0.6009	-0.0420	0.0340	0.4058	-1.1240	1.7995	0.5620	0.0196	-0.1422	0.1809	0.8000
Fire	-0.2780	-0.6577	0.1145	0.1720	2.5129	0.7720	4.5960	0.0080	-0.6187	-2.8488	1.4992	0.5710
H.Dung:Fire	0.1154	-0.0441	0.2734	0.1690	-0.5831	-1.5272	0.3774	0.2100	0.0926	-0.0247	0.2194	0.1060
Zone*Fire	<i>D. milanjana</i>				<i>E. rigidior</i>				<i>E. trichophora</i>			
Intercept	-14.8643	-20.2616	-10.2549	<3e-04	-10.5918	-13.5246	-8.0621	<3e-04	-10.0717	-13.1800	-6.7432	<3e-04
Zone10-15	2.4763	-4.1289	8.8368	0.4420	2.1083	-1.6202	5.5065	0.2550	2.0252	-2.7220	6.7271	0.3830
Zone>20	-1.9380	-8.8771	5.2896	0.5720	2.7679	-0.8629	6.9406	0.1550	2.0810	-2.6297	6.5574	0.3650
Fire	2.0686	-0.7479	5.1486	0.1470	-1.5518	-3.8343	0.8542	0.1730	0.4837	-1.5980	2.4814	0.6110
Zone10-15:Fire	0.2652	-3.6656	4.3406	0.8890	1.8765	-1.0834	4.6083	0.1720	-1.6067	-4.8226	1.4910	0.3240
Zone>20:Fire	1.0103	-2.6859	4.9734	0.5670	0.4349	-2.5268	3.1903	0.7680	-1.0587	-4.0242	1.6408	0.4540
E.Dung*Fire												
Intercept	-15.3748	-19.6275	-11.2757	<3e-04	-7.8762	-10.1533	-5.8136	<3e-04	-5.1251	-8.2206	-2.2969	0.0015
E.Dung	0.0883	-0.1010	0.2641	0.3185	-0.1579	-0.3559	0.0218	0.0570	-0.5610	-1.0070	-0.1150	0.0005
Fire	2.9646	1.0489	5.0315	0.0025	-0.6335	-1.9472	0.7431	0.3390	-1.2246	-2.8583	0.4888	0.1415
E.Dung:Fire	-0.0496	-0.1799	0.0965	0.4615	0.0179	-0.1123	0.1499	0.7760	0.1234	-0.1019	0.3422	0.2440
H.Dung*Fire												
Intercept	-13.9660	-17.5926	-10.7229	<3e-04	-8.3471	-10.0029	-6.5910	<3e-04	-7.7398	-10.0298	-5.6740	<3e-04
H.Dung	-0.5138	-2.2062	1.0193	0.5620	-1.2515	-2.6193	-0.0644	0.0320	-1.5979	-3.1668	-0.0784	0.0145

Variable	Posterior mean	Lower 95% CI	Upper 95% CI	pMCMC	Posterior mean	Lower 95% CI	Upper 95% CI	pMCMC	Posterior mean	Lower 95% CI	Upper 95% CI	pMCMC
Zone*Fire	<i>A. stipitata</i>				<i>D. giganteum</i>				<i>D. eriantha</i>			
Intercept	-4.1381	-5.5825	-2.6402	<3e-04	-6.7219	-8.4304	-5.0169	<3e-04	-4.4661	-5.6751	-3.3919	<3e-04
Zone10-15	-0.6306	-2.8924	1.8165	0.5960	-0.2411	-3.0965	2.7185	0.8650	2.0178	0.2897	3.7939	0.0295
Zone>20	0.2058	-2.0933	2.6083	0.8750	0.2758	-2.7765	3.0449	0.8630	2.2788	0.6079	4.1001	0.0105
Fire	-0.2751	-1.3500	0.6761	0.5930	0.6599	-0.5506	1.7731	0.2540	0.4680	-0.3760	1.1381	0.2155
Zone10-15:Fire	-0.0126	-1.4350	1.5226	0.9890	-0.9117	-2.7401	0.8225	0.2900	-0.3516	-1.4437	0.6857	0.5280
Zone>20:Fire	-0.0763	-1.4593	1.1646	0.9270	-1.2796	-2.8529	0.4225	0.1260	-0.3443	-1.3779	0.5671	0.4835
E.Dung*Fire												
Intercept	-5.3810	-6.6040	-4.1750	<3e-04	-5.4112	-6.9372	-3.9022	<3e-04	-2.8870	-4.0197	-1.9737	<3e-04
E.Dung	0.0737	0.0204	0.1248	0.0060	-0.0881	-0.1701	-0.0150	0.0235	-0.0310	-0.0772	0.0136	0.1740
Fire	0.1865	-0.5187	0.8741	0.5910	-0.5507	-1.4267	0.3155	0.2090	0.2027	-0.3548	0.7856	0.4720
E.Dung:Fire	-0.0315	-0.0615	-0.0001	0.0465	0.0272	-0.0120	0.0669	0.1715	0.0141	-0.0126	0.0384	0.2660
H.Dung*Fire												
Intercept	-4.2159	-5.2390	-3.1173	<3e-04	-6.6469	-7.9602	-5.3397	<3e-04	-3.2170	-4.2235	-2.3199	<3e-04
H.Dung	-0.0729	-0.3755	0.2712	0.6640	-0.0836	-0.4620	0.3336	0.6660	-0.2965	-0.6129	0.0076	0.0580
Fire	-0.3519	-0.9187	0.1904	0.2180	-0.2634	-1.0265	0.3773	0.4580	0.3195	-0.1694	0.7938	0.1920
H.Dung:Fire	0.1021	-0.1968	0.4316	0.5260	0.2322	-0.1391	0.6286	0.2170	-0.2512	-0.5742	0.0596	0.1080
Zone*Fire	<i>P. maximum</i>				<i>P. fleckii</i>				<i>U. trichopus</i>			
Intercept	-5.7109	-7.2744	-4.0305	<3e-04	-7.7248	-11.5692	-4.3007	<3e-04	-5.6186	-7.5103	-3.7116	<3e-04
Zone10-15	0.5020	-2.0881	3.0204	0.6980	-6.9181	-13.4356	-0.6228	0.0345	-6.8563	-11.0277	-3.1566	0.0005
Zone>20	-0.5565	-3.1648	1.9188	0.6780	-26.0980	-47.6301	-8.3913	<3e-04	-4.4625	-7.8675	-0.9302	0.0120
Fire	-0.7788	-1.8750	0.3217	0.1650	-0.0493	-2.5187	2.5145	0.9640	0.0547	-1.1093	1.4024	0.9145
Zone10-15:Fire	0.4027	-1.1687	1.9240	0.6320	2.5277	-1.0557	6.2993	0.1690	0.7399	-1.5247	2.8856	0.4945
Zone>20:Fire	0.9869	-0.5080	2.3635	0.1750	8.1039	1.9109	15.9737	0.0030	0.5598	-1.2669	2.3344	0.5420
E.Dung*Fire												
Intercept	-5.4566	-6.8494	-4.1148	<3e-04	-16.7738	-21.2877	-12.3487	<3e-04	-8.2088	-10.5263	-5.8726	<3e-04
E.Dung	-0.0257	-0.0848	0.0387	0.4250	0.2602	0.1227	0.4161	<3e-04	-0.0223	-0.1235	0.0843	0.6880
Fire	-0.2915	-1.0369	0.5077	0.4470	2.8769	0.7912	4.9850	0.0030	-0.0743	-1.3179	1.2483	0.9050
E.Dung:Fire	0.0098	-0.0246	0.0437	0.5650	-0.0917	-0.1811	-0.0061	0.0260	0.0025	-0.0530	0.0596	0.9230
H.Dung*Fire												
Intercept	-5.7928	-6.9762	-4.7000	<3e-04	-14.0380	-18.0332	-10.6266	<3e-04	-9.4468	-11.5411	-7.5469	<3e-04
H.Dung	0.2034	-0.1493	0.5065	0.2340	0.5481	-0.2977	1.3843	0.1830	0.5256	0.0232	1.0411	0.0345
Fire	-0.0423	-0.6272	0.5272	0.8920	1.7031	0.1483	3.3312	0.0300	0.2900	-0.6552	1.2709	0.5495
H.Dung:Fire	-0.4651	-0.8347	-0.1110	0.0080	0.3895	-0.3738	1.1382	0.3210	-0.0652	-0.5633	0.4003	0.7775

Note: This is Online Appendix 1 of Sianga, K., Van Telgen, M., Vrooman, J., Fynn, R.W.S. & Van Langevelde, F., 2017, 'Spatial refuges buffer landscapes against homogenisation and degradation by large herbivore populations and facilitate vegetation heterogeneity', *Koedoe* 59(2), a1434. <https://doi.org/10.4102/koedoe.v59i2.1434>