Oikos

OIK-02742

Davies, A. B., Levick, S. R., Robertson, M. P., van Rensburg, B. J., Asner, G. P. and Parr, C. L. 2015. Termite mounds differ in their importance for herbivores across savanna types, seasons and spatial scales. – Oikos doi: 10.1111/oik.02742

Appendix 1

Table A1. The two most parsimonious regression models for grazing intensity (tuft use) that received considerable empirical support ($\Delta_i < 30$) according to the second order Akaike information criterion (AIC*c*). The most parsimonious model we used in the final analysis is in bold. Δ_i is the difference between a model's AIC*c* value and that of the model with the lowest AIC*c*; the Akaike weight w_i is the likelihood of a given model's being the best model in the set. For all models, line transect was a random effect nested within termite mound identity.

Rank	Form of regression model	AIC_c	No. parameters	Δ_i	w_i
1	**Site + Distance + Season + Site*Distance + Site × Season**	**12815.8**	**6**	**0.00**	**0.817**
2	Site + Distance + Season + Site × Distance + Site × Season + Distance × Season	12818.8	7	3.00	0.183

Table A2. The three most parsimonious regression models for grazing lawn extent. Only the most parsimonious model received considerable empirical support according to the second order Akaike information criterion (AIC*c*). The most parsimonious model we used in the final analysis is in bold. Δ_i is the difference between a model's AIC*c* value and that of the model with the lowest AIC*c*; the Akaike weight w_i is the likelihood of a given model's being the best model in the set. For all models, termite mound identity was a random effect.

Rank	Form of regression model	AIC_c	No. parameters	Δ_i	w_i
1	**Site + Time**	**24933.8**	**3**	**0.00**	**1.000**
2	Time	24958.3	5	24.45	0.000
3	Site	35404.9	5	10471.04	0.000

Table A3. Pairwise comparisons of N and P concentration (mg kg^{-1}) across distance transects from termite mounds; data are from all savanna sites pooled. Generalised linear (N) and linear (P) mixed-effects models were applied to the data and following model selection (AIC*c*), multiple comparisons of means post hoc testing was conducted on the most parsimonious model using Tukey contrasts averaged across interaction terms when present (P). Bold p-values represent significant differences between the distance categories compared (top distance versus bottom distance in the table), italics refer to variable increase with distance (positive z-value) and non-italics variable decrease with distance (negative z-value).

Nutrient		0 m						1 m				
		1 m	2 m	4 m	8 m	16 m	32 m	2 m	4 m	8 m	16 m	32 m
N	z-statistic	-5.693	-7.793	-9.535	-10.328	-11.999	-11.966	-2.123	-3.884	-4.686	-6.318	-6.284
(mg kg^{-1})	p-value	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	0.339	**0.002**	**< 0.001**	**< 0.001**	**< 0.001**
P	z-statistic	-3.629	-5.929	-7.613	-8.412	-10.083	-11.544	-2.300	-3.984	-4.783	-6.455	-7.915
(mg kg^{-1})	p-value	**0.005**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	0.244	**0.001**	**< 0.001**	**< 0.001**	**< 0.001**

Nutrient		2 m				4 m			8 m		16 m
		4 m	8 m	16 m	32 m	8 m	16 m	32 m	16 m	32 m	32 m
N	z-statistic	-1.761	-2.563	-4.174	-4.140	-0.808	-2.395	-2.361	-1.585	-1.551	0.034
(mg kg^{-1})	p-value	0.575	0.137	**< 0.001**	**< 0.001**	0.985	0.201	0.215	0.692	0.714	1.000
P	z-statistic	-1.684	-2.483	-4.155	-5.615	-0.799	-2.470	-3.931	-1.672	-3.132	-1.460
(mg kg^{-1})	p-value	0.626	0.165	**< 0.001**	**< 0.001**	0.985	0.170	**0.002**	0.635	**0.029**	0.768

Table A4. Pairwise comparisons of N and P quantities (mg kg^{-1}) across savanna sites; data are from all distance categories pooled. Generalised linear (N) and linear (P) mixed-effects models were applied to the data and following model selection (AIC*c*), multiple comparisons of means post hoc testing was conducted on the most parsimonious model using Tukey contrasts averaged across interaction terms when present (P). Bold p-values represent significant differences between the sites compared (base level versus site compared).

Nutrient	Site (base level)	Skukuza		Napi
	Site compared	Napi	Pretoriuskop	Pretoriuskop
N (mg kg^{-1})	z-statistic	-1.643	-6.911	-4.490
	p-value	0.227	**<0.001**	**<0.001**
P (mg kg^{-1})	z-statistic	0.139	-7.197	-7.336
	p-value	0.989	**<0.001**	**<0.001**

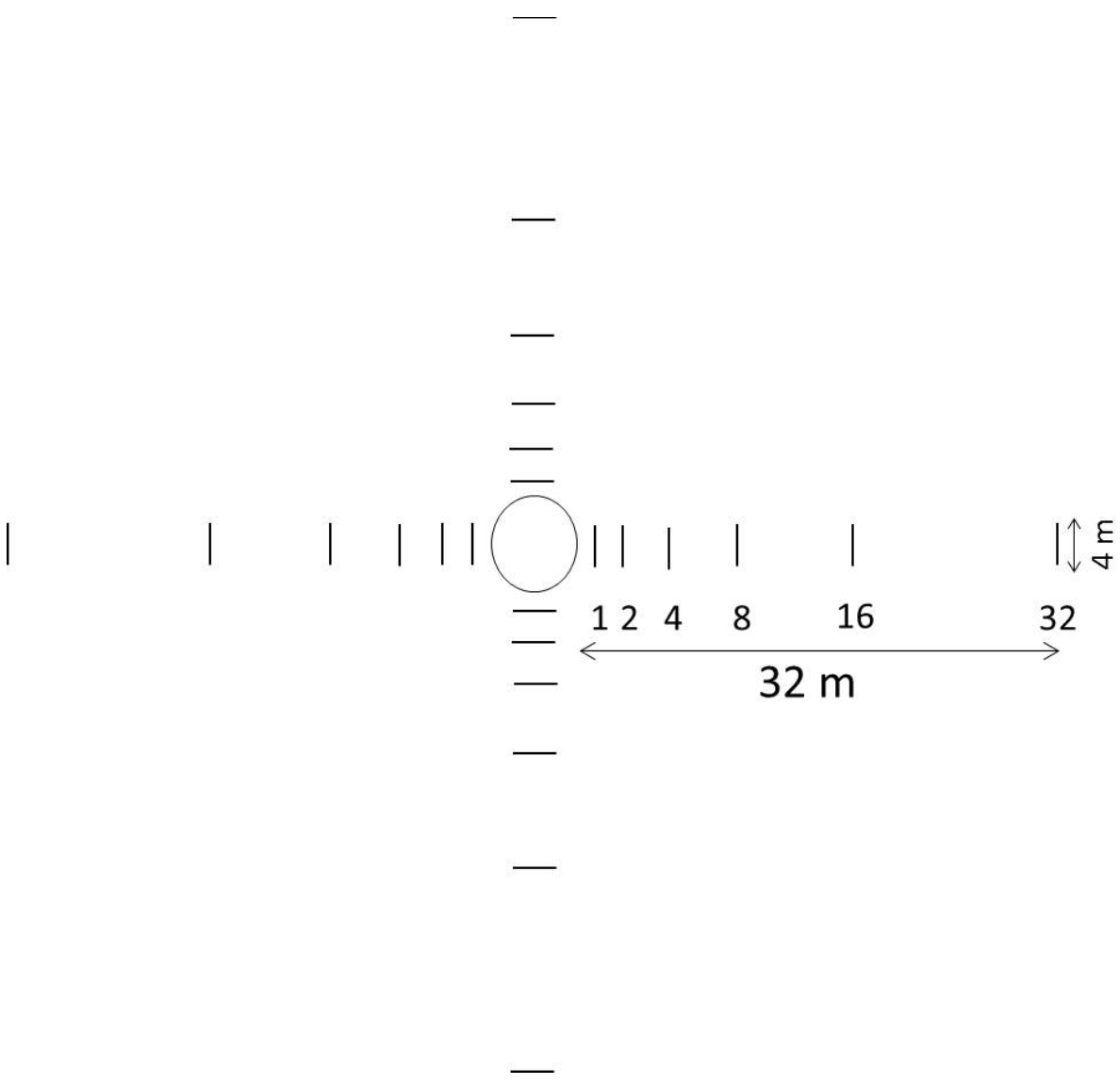

Figure A1. Schematic representation of the sampling design used to measure tuft use by mammalian herbivores around termite mounds. Transects measuring 4 m were placed at set distance intervals (1, 2, 4, 8, 16 and 32 m) from termite mounds in the four cardinal directions and grass tufts every 40 cm along them surveyed for tuft use. Grass samples were collected from a 1 × 1 m^2 quadrat centered on each 4 m transect for foliar nutrient analyses.

(a)

(b)

Figure A2. Heavily grazed *Macrotermes* mound at the intermediate site, Napi, depicting (a) an example of the grazing lawns measured during the study and(b) the definite boundaries between grazing lawn and savanna matrix.