

Location	Vegetation	Rainfall	Animals	SR	Age	Y_0	K	a	b	SE	R^2	F	P	Data	max d	n(d)	Source
Mallangwe Nature Trust, S.E. Zimbabwe	Limpopo lowveld	300-500	Wildlife ¹	57 ha/head	Unknown	-	0.827	-6.38	-0.0076	0.111	0.69	139.77	<0.001	Grass cover	900	101(10)	Unpublished, S. & B. Clegg & J.F. Derry
Gonarezhou, S.E. Zimbabwe	Limpopo lowveld	300-500	Wildlife ¹	90 ha/head	Unknown	-	0.904	8.79	0.1533	0.091	0.87	133.74	<0.001	Canopy distance	1906	115(11)	Rodriguez 1995
Sandriver, South Africa	Karoo Dwarf Shrublands	167	Smallstock ²	6 ha/assu	1/2 yr rotation	-	3.37	0.813	-0.0036	0.145	0.53	50.48	0.001	Total cover	310	70(7)	Unpublished, S.J. Milton, Percy FitzPatrick Institute, Cape Town.
Kgatlang District, S.E. Botswana	Kalahari sandveld	350-400	Cattle	475 head	29 yr	-	2.99	-0.826	-0.0324	0.168	0.73	12.27	0.017	Dung cover	310	16(16)	Moleale 1994
						-	0.756	95.64	57.60	0.187	0.47	54.34	<0.001	Grass biomass	5000	88(11)	
						-	0.828	5.89	0.5010	0.111	0.83	178.67	<0.001	Grass cover	5000	88(11)	
						-	0.854	1.61	0.0516	0.107	0.87	168.47	<0.001	Tree cover	5000	88(11)	
						0.069	1.35	-0.783	-0.0993	0.047	0.98	150.65	<0.001	Bare ground	5000	88(11)	
						0.692	0.193	-3.48	-0.0201	0.071	0.56	332.34	<0.001	Plant nitrogen	5000	88(11)	
						7.15	-6.69	-2.40	0.0177	0.071	0.89	225.59	<0.001	CEC ³	5000	88(11)	
						0.702	0.821	0.572	-0.0151	0.023	0.96	3338.09	<0.001	Soil pH	5000	88(11)	
						-	0.757	-7.20	-0.1434	0.122	0.87	38.28	<0.001	Soil phosphorus	5000	88(11)	
						0.202	5.15	1.69	-0.0316	0.064	0.95	138.88	<0.001	Soil calcium	5000	88(11)	
						0.208	2.25	0.649	-0.0421	0.069	0.93	111.24	<0.001	Soil magnesium	5000	88(11)	
						0.108	14.21	2.73	-0.0433	0.048	0.97	165.80	<0.001	Soil potassium	5000	88(11)	
						-	16.99	-1.48	-0.2384	0.088	0.90	30.48	<0.001	Soil sodium	5000	88(11)	
						0.387	0.705	-1.75	-0.0244	0.030	0.99	1248.11	<0.001	Plant phosphorus	5000	88(11)	
						0.292	0.561	-7.85	-0.2841	0.124	0.82	31.10	<0.001	Plant nitrogen	5000	88(11)	
						0.349	2.14	0.842	-0.0856	0.090	0.82	76.23	<0.001	Plant Calcium	5000	88(11)	
Makgadikgadi Basin, E. Botswana	Kalahari sandveld	400-500	Cattle	17 ha/LU	25 yr	-	0.873	12.20	0.0698	0.087	0.93	194.30	<0.001	Grass composition ⁴	5000	34(7)	Perkins 1991
						-	0.941	0.533	0.0014	0.060	0.94	301.98	<0.001	Shrub composition ⁴	5000	46(7)	
						0.878	0.121	-2.15	-0.0066	0.040	0.45	923.06	<0.001	Soil pH	5000	46(7)	
						-	2.21	-1.03	-0.0063	0.059	0.98	113.14	0.001	HUI ⁵	5000	46(6)	
						0.256	0.880	-1.58	-0.0005	0.022	0.98	2891.91	<0.001	CEC ³	5000	46(7)	
						-	0.866	28.57	0.5749	0.107	0.62	137.36	<0.001	Soil sodium	5000	46(7)	
						-	0.978	-0.869	0.0020	0.100	0.46	179.59	<0.001	Soil magnesium	5000	46(7)	
Makhi, N. Botswana	Kalahari sandveld	451	Cattle	11 ha/LU	21 yr	0.676	0.501	-0.603	-0.0182	0.028	0.95	1206.26	<0.001	Soil pH	2450	27(7)	Mphinyane 2001
						0.233	2.89	1.03	-0.0083	0.034	0.99	334.51	<0.001	Soil phosphorus	2450	27(7)	
						0.364	5.09	1.98	-0.0040	0.056	0.94	194.92	<0.001	Soil magnesium	2450	27(7)	
						0.078	5.15	1.54	-0.0118	0.074	0.95	52.87	0.004	Soil potassium	2450	27(7)	
						1.34	-1.07	0.775	0.0207	0.035	0.98	305.62	<0.001	Soil sodium	2450	27(7)	
						0.333	1.50	0.293	-0.0087	0.078	0.90	80.91	0.002	Soil calcium	2450	27(7)	
						0.333	2.76	1.15	-0.0247	0.077	0.92	63.31	0.003	Soil organic carbon	2450	27(7)	
						0.436	0.589	-3.10	-0.0152	0.025	0.99	1150.89	<0.001	CEC ³	2450	27(7)	
						-	4.77	1.48	-0.0009	0.156	0.78	19.01	0.05	Utilization	3200	800(5)	
						-	0.958	0.791	0.0024	0.058	0.96	296.30	0.003	Phytomass ⁶	3200	800(5)	
Tierberg, South Africa	Karoo Dwarf Shrublands	167	Unknown	Unknown	Unknown	-	1.01	-0.125	0.0059	0.032	0.96	910.22	0.024	Total cover	1000	40(4)	Stokes & Yeaton 1994
Kruger National Park, South Africa	Transvaal lowveld	530	Wildlife	35 LSU/km ²	28 yr	-	1.80	1.51	0.0065	0.066	0.93	1235.01	<0.001	Grass composition ⁷	2000	23(6)	Thrash 1993
Kalahari Gemsbok National Park, Botswana	Kalahari sandveld	209-230	Wildlife	Unknown	Unknown	-	0.90	-28.69	-14.75	0.027	0.99	1937.7	<0.0001	Grass composition ⁷	100%	44(8)	van Rooyen et al. 1994
Eastern mountains, Lesotho	Alpine Veld	900-1100	Livestock	Unknown	Unknown	-	2.22	0.803	0.0008	0.011	0.98	10452.50	<0.001	Total cover	530	94(5)	Morris 2002
Ceel Dhare, Somalia	Coastal grassland	275	Wildlife + livestock	9 ha/AU	Unknown	-	0.954	1.064	0.0915	0.106	0.89	236.94	<0.001	Range condition	100%	15(15)	Barker et al. 1989
						-	0.904	1.48	0.4750	0.072	0.92	634.88	<0.001	Bare ground	100%	15(15)	
Paulshoek, Namaqualand, South Africa	Succulent Karoo	150-250	Smallstock ²	101 head	15 yr	0.217	0.475	3.83	0.0070	0.217	0.38	11.14	0.019	Soil phosphorus	2000	128(8)	Riginos & Hoffman 2003
						-	0.790	0.258	0.0060	0.138	0.51	64.68	<0.001	Soil magnesium	2000	128(8)	
						-	0.955	0.799	0.0023	0.207	0.52	27.38	0.002	Soil nitrogen	2000	128(8)	
						0.341	1.44	-0.687	-0.0126	0.205	0.58	16.38	0.010	Infiltration	2000	128(8)	
						-	1.00	-0.671	0.0016	0.120	0.43	130.48	<0.001	Species richness	2000	32(8)	
						0.371	0.605	5.18	0.0064	0.078	0.93	158.13	<0.001	Total cover	2000	32(8)	
						-	0.733	5.88	0.0139	0.143	0.85	36.52	<0.001	Fruits per tree	2000	560(8)	
						-	0.966	-33.36	-0.0094	0.046	0.99	506.43	0.002	Defoliation	4500	412(5)	
Fort Hare, South Africa	False Thornveld of Eastern Cape (Acocks, 1953)	617	Goats	1 ha/LSU	<1 yr	-	1.04	0.705	0.0006	0.089	0.84	115.01	0.009	Blite size	4500	412(5)	Derry 2004
						-	3.01	2.16	0.0002	0.131	0.68	39.08	0.025	Blite density	4500	412(5)	
						-	3.29	2.28	0.0003	0.081	0.91	121.14	0.008	Intake rate ⁸	4500	470(5)	

¹ especially elephant ² sheep and goats ³ cation exchange capacity ⁴ detrended Correspondence Analysis ⁵ herbivore use intensity ⁶ dry weight ⁷ Canonical Correspondence Analysis ⁸ goats

Table 1: Regression of generalised piosphere model (Graetz & Ludwig 1978) for variables measured in Africa. Site age and location, vegetation and animal types, annual rainfall (mm/yr.), regression statistics (standard error, SE; R^2 ; F and P), maximum sample 'distance from water' (max d, metres), sample size (n) and 'distance from water' classes (d) and data source are given, along with model parameters (K, a and b) plus adjustment term Y_0 introduced by Thrash (1998) for non-zero lower asymptotes, equivalent to $K/(1+e^b)$. To enable comparisons, each variable was normalised with respect to its maximum value. Only significant fits are presented. Model selection between 3- and 4-parameter versions was based on SE, R^2 and PRESS (Press 1992, not shown) statistics