Supporting Information

Elevation filters bat, rodent, and shrew communities differently by morphological traits.

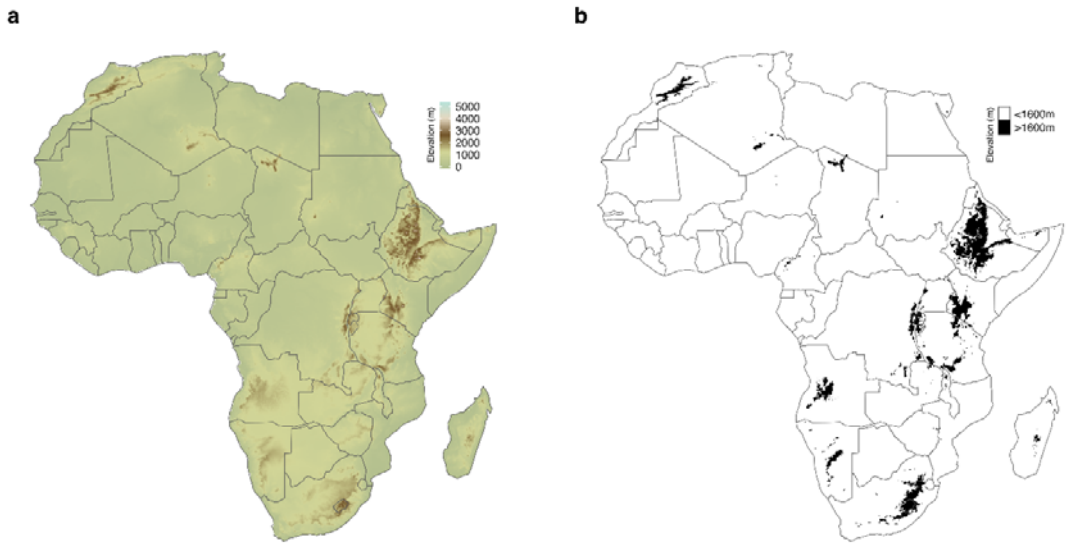

Figure S1. Digital elevation model for of Africa (a), with the uplands (> 1600m above sea level) (b)

Table S1. Correlation coefficients of the functional traits. The grey cells are the diagonal values of the correlation matrix, showing a trait correlated with itself (value of 1).

	MASS	FA	HB	TAIL	Ear	HF	GSKL	ZYGO	C.M3
MASS	1.00	0.88	0.92	-0.38	0.41	0.88	0.89	0.89	0.89
FA	0.88	1.00	0.91	-0.32	0.60	0.94	0.91	0.90	0.93
HB	0.92	0.91	1.00	-0.44	0.46	0.91	0.94	0.96	0.95
TAIL	-0.38	-0.32	-0.44	1.00	-0.04	-0.41	-0.53	-0.51	-0.49
Ear	0.41	0.60	0.46	-0.04	1.00	0.62	0.55	0.48	0.55
HF	0.88	0.94	0.91	-0.41	0.62	1.00	0.93	0.92	0.93
GSKL	0.89	0.91	0.94	-0.53	0.55	0.93	1.00	0.96	0.98
ZYGO	0.89	0.90	0.96	-0.51	0.48	0.92	0.96	1.00	0.95
C.M3	0.89	0.93	0.95	-0.49	0.55	0.93	0.98	0.95	1.00

Table S2. The 19 bioclimatic variables used in the species distribution modelling, available from www.world-clim.org (Hijmans et al., 2005).

BIOCLIM variable	Description
BIO1	Annual mean temperature
BIO2	Mean diurnal range of temperatures (Mean of monthly (max temp - min temp))
BIO3	Isothermality ((BIO2/BIO7)*100)
BIO4	Temperature seasonality (standard deviation*100)
BIO5	Maximum temperature of warmest month
BIO6	Minimum temperature of coldest month
BIO7	Temperature annual range (BIO5 - BIO6)
BIO8	Mean temperature of wettest quarter
BIO9	Mean temperature of driest quarter
BIO10	Mean temperature of warmest quarter
BIO11	Mean temperature of coldest quarter
BIO12	Annual precipitation
BIO13	Precipitation of wettest month
BIO14	Precipitation of driest month
BIO15	Precipitation seasonality (coefficient of variation)
BIO16	Precipitation of wettest quarter
BIO17	Precipitation of driest quarter
BIO18	Precipitation of warmest quarter
BIO19	Precipitation of coldest quarter

Table S3. Beta coefficients of the linear regressions run on the three functional diversity metrics (FRic, FEve, FDiv) against elevation. Also shown is whether this coefficient is significantly different from zero (p value) as well as the test statistic (t value). The column "Relationship" shows whether there was a significant positive or negative relationship between the functional diversity metric and elevation for each of the three taxa (bats, rodents, and shrews).

Model	Beta coefficient	t value	p value	Relationship
Bats: FRic	-0.007332	3.422	0.000919	Negative
Bats: FEve	0.00002812	1.871	0.0645	Not significant
Bats: FDiv	0.00001573	1.762	0.0813	Not significant
Rodents: FRic	0.0002694	0.853	0.395	Not significant
Rodents: FEve	-0.00001268	2.104	0.0367	Negative
Rodents: FDiv	0.00001848	4.645	0.00000712	Positive
Shrews: FRic	-0.0008690	2.460	0.0159	Negative
Shrews: FEve	-0.00003814	1.776	0.0793	Not significant
Shrews: FDiv	0.00002038	2.567	0.012	Positive

Table S4. Coefficients of fourthcorner analysis for bats, rodents and shrews. These values were used to plot Figure 7. They represent mean standardized values of the interactions between environmental and trait variables. The full descriptions of the abbreviations in the tables below can be found in the caption to Figure 7.

Bats

	Elevation	Bio2	Bio3	Bio15	Bio18	Bio19
MASS	0	0.022461	0	0	0	0.04541
FA	0	-0.05162	0	0	0	0
HB	0	0	0	0.033487	-0.01248	0
TAIL	0	0	-0.12451	0	0	-0.06038
Ear	0	0	0	0	0	0
HF	-0.0232	-0.06985	0.084904	0	0	0
GSKL	0	0	0	0	0	0
ZYGO	0	0	0	0	0	0
C.M3	0	0	0	0	0	0

Rodents

	Elevation	Bio2	Bio3	Bio15	Bio18	Bio19
MASS	0.002854	0	0	0	0	0
HB	0	0	0	0	0	0.012393
TAIL	-0.2041	-0.15667	0.121506	0	0.028442	0
Ear	0.232695	0	0	0	0.06026	0
HF	0	0.13249	0	0	0	0
GSKL	-0.19491	0	0	-0.01804	0	0
ZYGO	0	0.02791	0	0	-0.13197	0
M1.M3	0.219602	0	0	0	0	0

Shrews

	Elevation	Bio2	Bio3	Bio15	Bio18	Bio19
MASS	-0.41382	-0.35916	0.332486	0.038878	0.259435	-0.12916
HB	0	-0.19605	-0.00818	0.082034	0	-0.21235
TAIL	-0.56382	-0.29781	0.359049	-0.20546	0.599283	0.187284
Ear	-0.90036	0.32573	-0.51192	0.588216	0.227491	-0.07212
HF	2.293317	0.358122	-0.51392	0	-1.4515	0
GSKL	0	0.253149	0	0.358602	-0.92109	0.812092
ZYGO	0.859892	0	0	-0.95261	-0.67722	-0.79474
I.M3	-1.42919	0	0.249702	0	1.942649	0

References

Hijmans, R. J., Cameron, S. E., Parra, J. L., Jones, P. G., & Jarvis, A. (2005). Very high resolution interpolated climate surfaces for global land areas. *International Journal of Climatology*, *25*(15), 1965–1978. https://doi.org/10.1002/joc.1276