Supplementary material

Dalerum, F., de Vries, J. L., Pirk, C. W. W. and Cameron, E. Z. Spatial

and temporal dimensions to the taxonomic diversity of arthropods in an

arid grassland savannah.

Table A1. Evaluation of all model terms from a permutation based linear model on the effects of season (dry or wet), habitat (grass, pan, savannah, shrub), temporal resolution (month, all), and spatial resolution (trap, site, habitat) on arthorpod α diversity. This subset model exluded data pooled across both seasons and data pooled across all habitats.

Term	df	F	p
Season	1,1250	200.1	<0.001
Habitat	3,1250	23.1	<0.001
Temporal resolution	1,1250	171.5	<0.001
Spatial resolution	2,1250	42.6	<0.001
Season x Habitat	3,1250	2.6	0.054
Season x Temporal resolution	1,1250	1.3	0.246
Season x Spatial resolution	2,1250	19.3	<0.001
Habitat x Temporal resolution	3,1250	3.4	0.018
Habitat x Spatial resolution	6,1250	2.3	0.036
Temporal resolution x Spatial resolution	2,1250	1.3	0.266
Season x Habitat x Temporal resolution	3,1250	0.2	0.903
Season x Habitat x Spatial resolution	6,1250	1.7	0.107
Season x Temporal resolution x Spatial resolution	1,1250	0.0	0.841
Habitat x Temporal resolution x Spatial resolution	6,1250	0.1	0.991
Season x Habitat x Temporal resolution x Spatial resolution	3,1250	0.0	0.992

Table A2. Evaluation of all model terms from a permutation based linear model on the effects of season (dry, wet, both), habitat (grass, pan, savannah, shrub), and spatial resolution (trap, site, habitat) on arthorpod α diversity. This subset model excluded data quantified on a monthly resolution and data pooled across all habitats.

Term	df	F	p
Season	2,460	64.2	<0.001
Habitat	3,460	10.6	<0.001
Spatial resolution	2,460	14.7	<0.001
Season x Habitat	6,460	1.7	0.130
Season x Spatial resolution	4,460	4.4	0.002
Habitat x Spatial resolution	6,460	1.8	0.097
Season x Habitat x Spatial resolution	12,460	0.5	0.917

Table A3. Evaluation of all model terms from a permutation based linear model on the effects of season (dry, wet, both), habitat (grass, pan, savannah, shrub, all), and temporal resolution (month, all) on arthorpod α diversity. This subset model only included data pooled across all traps within each habitat or all traps pooled within all habitats.

Term	df	F	p
Season	2,54	3.2	0.048
Habitat	4,54	1.6	0.185
Temporal resolution	1,54	1.1	0.293
Season x Habitat	8,54	0.3	0.963
Season x Temporal resolution	1,54	<0.1	0.941
Habitat x Temporal resolution	4,54	<0.1	0.999

Table A4. Evaluation of all fixed effect terms in a generalized linear model evaluating the effects of season (dry, wet), habitat (grass, pan, savannah, shrub), temporal resolution (month, season, both) and spatial resolution (site, habitat) on arthropod β diversity. The model was fitted with trap nested within trap site nested within habitat as random effect structure. This subset model exluded data quantified on the same trap across time, as well as data quantified across all samples pooled.

Term	df	F	p
Season	1,4441	67.3	<0.001
Habitat	3,20	4.4	0.016
Spatial resolution	1,4429	6.6	0.010
Temporal resolution	2,4429	12.7	<0.001
Season x Habitat	3,4441	6.6	<0.001
Season x Spatial resolution	1,4429	0.6	0.445
Habitat x Spatial resolution	3,4429	0.2	0.903
Season x Temporal resolution	2,4429	0.8	0.460
Habitat x Temporal resolution	6,4429	1.0	0.453
Spatial resolution x Temporal resolution	2,4429	1.1	0.322
Season x Habitat x Spatial resolution	3,4429	0.2	0.912
Season x Habitat x Temporal resolution	6,4429	0.1	0.990
Season x Spatial resolution x Temporal resolution	2,4429	0.3	0.741
Habitat x Spatial resolution x Temporal resolution	6,4429	0.1	0.999
Season x Habitat x Spatial resolution x Temporal resolution	6,4429	0.1	0.999

Table A5. Evaluation of all fixed effect terms in a generalized linear model evaluating the effects of season (dry, wet), habitat (grass, pan, savannah, shrub), temporal resolution (season, both) and spatial resolution (trap, site, habitat) on arthropod β diversity. The model was fitted with trap nested within trap site nested within habitat as random effect structure. This subset model exluded data quantified on the same trapping occasion, as well as data quantified across all samples pooled.

Term	df	F	p
Season	1,4440	42.5	<0.001
Habitat	3,20	4.3	0.017
Spatial resolution	2,4430	1.6	0.206
Temporal resolution	1,4430	1.7	0.193
Season x Habitat	3,4440	6.0	<0.001
Season x Spatial resolution	2,4430	1.0	0.373
Habitat x Spatial resolution	6,4430	0.1	0.999
Season x Temporal resolution	1,4430	0.2	0.682
Habitat x Temporal resolution	3,4430	0.0	0.992
Spatial resolution x Temporal resolution	2,4430	0.1	0.878
Season x Habitat x Spatial resolution	6,4430	0.1	0.995
Season x Habitat x Temporal resolution	3,4430	<0.1	0.996
Season x Spatial resolution x Temporal resolution	2,4430	<0.1	0.986
Habitat x Spatial resolution x Temporal resolution	6,4430	<0.1	>0.999
Season x Habitat x Spatial resolution x Temporal resolution	6,4430	<0.1	>0.999

Table A6. Evaluation of all main fixed effects in a generalized linear model evaluating the effects of season (dry, wet), habitat (grass, pan, savannah, shrub), temporal resolution (month, season, both) and spatial resolution (trap, site, habitat) on arthropod β diversity. The model was fitted with trap nested within trap site nested within habitat as random effect structure. This subset model included all levels of temporal and spatial resolution.

Term	df	F	p
Season	1,8269	116.9	<0.001
Habitat	3,20	3.8	0.026
Spatial resolution	3,8259	13.3	<0.001
Temporal resolution	2,8259	10.7	<0.001