

Supplementary Data 3. Distribution of sample sizes across all categories. The final dataset included many responses for which we lacked sufficient sample size to analyze (set a priori to 3 articles per response category). The numbers in each column indicate the number of observations and, in parentheses, articles per megafauna analysis group.

Response	African assemblages	Introduced	Invasive	Native	Sufficient N
Soil					
Bare Ground	5(3)	34(20)	22(13)	42(16)	Yes
CO2 Respiration	0(0)	5(3)	5(3)	70(7)	Yes
Litter Cover	1(1)	38(15)	9(6)	91(28)	Yes
Root Biomass	0(0)	12(3)	12(3)	39(7)	Yes
Soil C:N	0(0)	11(5)	6(2)	19(9)	Yes
Soil Compaction	0(0)	15(6)	9(3)	32(9)	Yes
Soil K	6(1)	9(4)	1(1)	26(9)	Yes
Soil Labile N	9(2)	22(4)	0(0)	94(18)	Yes
Soil Mg	12(3)	8(4)	1(1)	30(10)	Yes
Soil Moisture	0(0)	22(8)	13(4)	47(15)	Yes
Soil Organic C	3(1)	30(4)	26(3)	30(10)	Yes
Soil Organic Matter	5(2)	16(5)	9(2)	22(12)	Yes
Soil Respiration	0(0)	10(4)	10(4)	107(8)	Yes
Soil Total C	30(6)	13(9)	7(5)	119(28)	Yes
Soil Total Ca	12(3)	10(4)	1(1)	30(10)	Yes
Soil Total N	47(9)	19(10)	13(7)	173(38)	Yes
Soil Total P	46(9)	13(6)	4(2)	60(14)	Yes
Soil pH	13(4)	14(6)	7(2)	48(14)	Yes
Ammonification Rate	0(0)	0(0)	0(0)	1(1)	No
Cation Exchange Capacity	9(3)	3(2)	0(0)	14(5)	No
Denitrification Rate	0(0)	1(1)	0(0)	1(1)	No
Methane Respiration	0(0)	2(1)	2(1)	0(0)	No
N Mineralization Rate	2(1)	5(2)	0(0)	68(12)	No
Nitrification Rate	0(0)	1(1)	0(0)	3(3)	No
PO4 Mineralization Rate	0(0)	0(0)	0(0)	1(1)	No
Soil Al	3(1)	0(0)	0(0)	3(1)	No
Soil B	3(1)	0(0)	0(0)	3(1)	No

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Soil Conductivity	2(1)	1(1)	1(1)	9(2)	No
Soil Cu	3(1)	1(1)	0(0)	3(1)	No
Soil Decomposition Rate	1(1)	20(2)	8(1)	19(5)	No
Soil Exchangeable K	3(1)	2(1)	0(0)	16(4)	No
Soil Fe	3(1)	1(1)	0(0)	3(1)	No
Soil Infiltration Rate	3(1)	1(1)	1(1)	9(4)	No
Soil Labile P	5(2)	3(2)	1(1)	27(10)	No
Soil Mn	3(1)	1(1)	0(0)	3(1)	No
Soil N:Ca	0(0)	0(0)	0(0)	1(1)	No
Soil N:P	0(0)	0(0)	0(0)	1(1)	No
Soil P:Ca	0(0)	0(0)	0(0)	1(1)	No
Soil Recalcitrant C	0(0)	0(0)	0(0)	5(1)	No
Soil S	3(1)	1(1)	0(0)	4(2)	No
Soil Temperature	0(0)	4(2)	4(2)	6(4)	No
Soil Total Na	9(3)	1(1)	0(0)	14(5)	No
Soil Zn	3(1)	1(1)	0(0)	3(1)	No
Soil redox	0(0)	4(1)	4(1)	0(0)	No
Soil salinity	0(0)	5(1)	5(1)	0(0)	No
Vertebrates					
Bird Abundance	2(1)	23(4)	19(3)	92(9)	Yes
Bird Diversity	4(1)	18(3)	14(2)	39(7)	Yes
Mammal Abundance	115(5)	11(3)	8(2)	151(14)	Yes
Small Mammal Abundance	115(5)	11(3)	8(2)	137(11)	Yes
Vertebrate Abundance	121(9)	37(7)	30(5)	251(27)	Yes
Vertebrate Diversity	14(3)	19(3)	15(2)	57(11)	Yes
Fish Abundance	0(0)	3(1)	3(1)	0(0)	No
Fish Diversity	0(0)	1(1)	1(1)	0(0)	No
Herpetofauna Abundance	4(3)	0(0)	0(0)	8(5)	No
Herpetofauna Diversity	3(1)	0(0)	0(0)	3(1)	No

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Mammal Diversity	7(1)	0(0)	0(0)	15(3)	No
Mesocarnivore Abundance	0(0)	0(0)	0(0)	2(2)	No
Small Mammal Diversity	7(1)	0(0)	0(0)	15(3)	No
Ungulate Abundance	0(0)	0(0)	0(0)	12(2)	No
Ecosystem					
Dead Vegetation	1(1)	47(17)	17(8)	152(33)	Yes
Growth Rates	35(5)	20(5)	13(2)	129(13)	Yes
CH4 Exchange	0(0)	0(0)	0(0)	3(1)	No
CO Exchange	0(0)	3(1)	3(1)	0(0)	No
Ecosystem Respiration	0(0)	0(0)	0(0)	8(1)	No
Fire Severity	2(1)	0(0)	0(0)	15(3)	No
Net Ecosystem Exchange	0(0)	0(0)	0(0)	3(1)	No
Net Ecosystem Exchange	0(0)	3(1)	3(1)	0(0)	No
Primary Productivity	0(0)	4(1)	4(1)	79(9)	No
Total Biomass	0(0)	1(1)	1(1)	0(0)	No
Total Carbon	0(0)	2(1)	0(0)	0(0)	No
Invertebrates					
Invert Detritivore Abundance	3(2)	16(4)	11(3)	116(17)	Yes
Invert Herbivore Abundance	6(3)	35(5)	7(2)	148(20)	Yes
Invert Predator Abundance	9(3)	18(6)	3(2)	108(18)	Yes
Invertebrate Abundance	39(9)	121(13)	54(8)	511(45)	Yes
Invertebrate Diversity	15(3)	49(7)	6(3)	111(19)	Yes
Invert DiseasePathogen Abundance	4(1)	0(0)	0(0)	25(3)	No
Invert Herbivore Diversity	3(1)	12(1)	0(0)	21(6)	No
Invert Predator Diversity	4(2)	12(1)	0(0)	11(4)	No
Pollinator Abundance	2(1)	3(1)	3(1)	23(5)	No
Pollinator Diversity	2(1)	0(0)	0(0)	12(3)	No
Microbes					
Microbe Abundance	2(1)	24(4)	22(3)	29(7)	Yes

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Archaea Diversity	0(0)	0(0)	0(0)	1(1)	No
Fungi Abundance	0(0)	0(0)	0(0)	18(6)	No
Fungi Diversity	0(0)	0(0)	0(0)	8(5)	No
Microbial Diversity	0(0)	2(1)	0(0)	5(4)	No
Plant_Nutrients					
Plant C	3(1)	0(0)	0(0)	46(12)	No
Plant C:N	2(1)	2(1)	0(0)	24(7)	No
Plant C:P	2(1)	0(0)	0(0)	6(1)	No
Plant Ca	0(0)	1(1)	0(0)	1(1)	No
Plant Cu	0(0)	1(1)	0(0)	0(0)	No
Plant Fe	0(0)	1(1)	0(0)	0(0)	No
Plant K	0(0)	1(1)	0(0)	0(0)	No
Plant Mg	0(0)	1(1)	0(0)	1(1)	No
Plant Mn	0(0)	1(1)	0(0)	0(0)	No
Plant N	28(5)	1(1)	0(0)	247(28)	No
Plant N:Ca	0(0)	0(0)	0(0)	1(1)	No
Plant N:P	2(1)	0(0)	0(0)	8(3)	No
Plant Na	0(0)	0(0)	0(0)	1(1)	No
Plant P	28(5)	1(1)	0(0)	47(8)	No
Plant P:Ca	0(0)	0(0)	0(0)	1(1)	No
Plant S	0(0)	1(1)	0(0)	0(0)	No
Plant Zn	0(0)	1(1)	0(0)	0(0)	No