

Supporting Information File 3 for: Experimental manipulation of grassland plant diversity induces complex shifts in aboveground arthropod diversity

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Table A: **Sensitivity analysis of the effect of the 60-species mixture on the SEM results.**

a) Herbivores							
Variables	Effects	PSR	Biomass	Grasses	Legumes	Small Herbs	Tall Herbs
Abundance	Direct	0.19	0.31	-0.15	-0.02	0.28	-0.02
	Indirect	0.17	-	-	0.05	-	0.03
	Total	0.36	-	-	0.03	-	0.01
Richness	Direct	0.53	-0.04	-0.15	-0.02	0.00	0.13
	Indirect	-0.02	-	-	-0.01	-	0.00
	Total	0.51	-	-	-0.03	-	0.13
Evenness	Direct	0.27	-0.38	0.16	-0.06	-0.18	0.12
	Indirect	-0.21	-	-	-0.07	-	-0.04
	Total	0.06	-	-	-0.13	-	0.08
Dominance	Direct	-0.49	0.26	-0.32	0.17	0.08	-0.14
	Indirect	0.14	-	-	0.04	-	0.02
	Total	-0.35	-	-	0.21	-	-0.12

b) Carnivores							
Variables	Effects	PSR	Biomass	Grasses	Legumes	Small Herbs	Tall Herbs
Abundance	Direct	0.04	0.29	-0.13	0.16	0.31	0.09
	Indirect	0.15	-	-	0.05	-	0.02
	Total	0.19	-	-	0.21	-	0.11
Richness	Direct	-0.02	0.34	-0.23	0.24	0.04	0.06
	Indirect	0.18	-	-	0.06	-	0.03
	Total	0.16	-	-	0.30	-	0.09
Evenness	Direct	-0.09	-0.17	0.24	-0.10	-0.38	-0.10
	Indirect	-0.09	-	-	-0.02	-	-0.01
	Total	-0.18	-	-	-0.12	-	-0.11
Dominance	Direct	0.23	0.12	-0.19	0.02	0.36	0.11
	Indirect	0.07	-	-	0.01	-	0.00
	Total	0.30	-	-	0.03	-	0.11

Direct, indirect and total effect of the PSR, plant biomass (g/square m) and of the 4 functional groups on the abundance, richness and evenness of the a) Herbivores and b) Carnivores, without the 60-species plots. Reported are the standardized path coefficients from SEM, bold coefficient indicate significance.

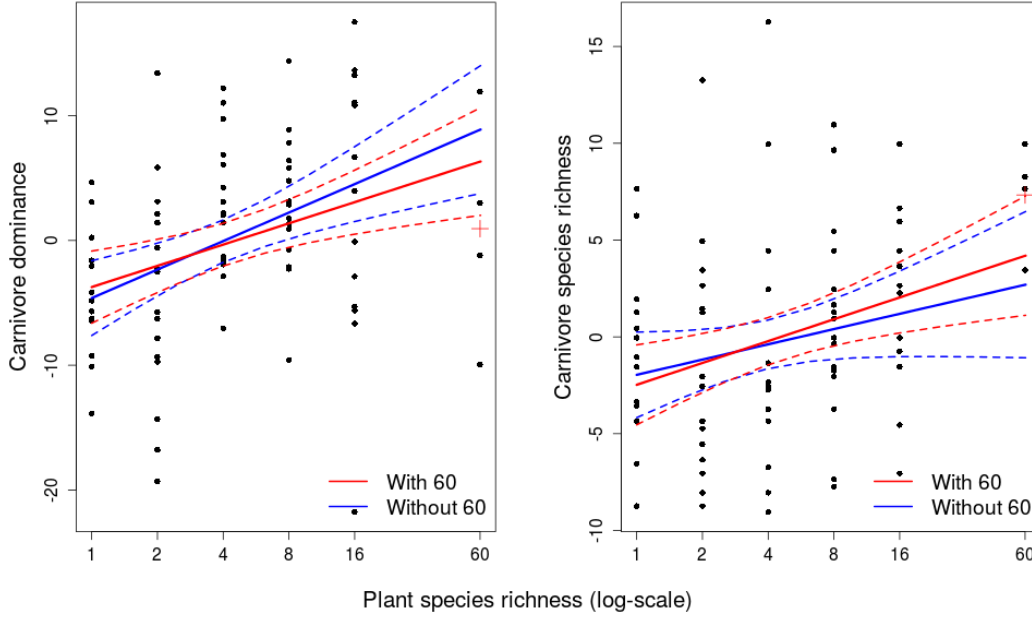


Figure A: **Relationship between plant species richness and carnivores richness (left) and dominance (right)**, the red line is the linear regression fitted line with the 60-species mixture while the blue line is without these mixture. The dotted line represent the 95% confidence interval around these fitted lines. the red cross is the mean observed value for the 60-species mixture.

Table B: **Sensitivity analysis of the standardization effect on the linear models.** Given are the slopes from the linear models together with their significance levels. Standardization 1 is the observed abundance divided by the maximum values of the respective sampling techniques (i.e. the method used in the main analysis). Standardization 2 is the observed abundance divided by the summed abundance of the respective sampling technique. Standardization 3 is the observed abundance divided by the mean of the respective sampling technique.

Standardization	Herbivores			Carnivores		
	Abundance	Evenness	Dominance	Abundance	Evenness	Dominance
Unstandardized	0.23 ^{***}	0.00	-2.22	0.11 ^{***}	-0.05 [*]	1.87 [*]
Standardized 1	0.24 ^{***}	0.00	-5.73 ^{***}	0.11 ^{***}	-0.05 [*]	2.46 ^{**}
Standardized 2	0.33 ^{***}	-0.13	0.57	0.11 ^{***}	-0.04	1.70 [*]
Standardized 3	0.27 ^{***}	0.00	-1.26	0.11 ^{***}	-0.05 [*]	1.84 [*]

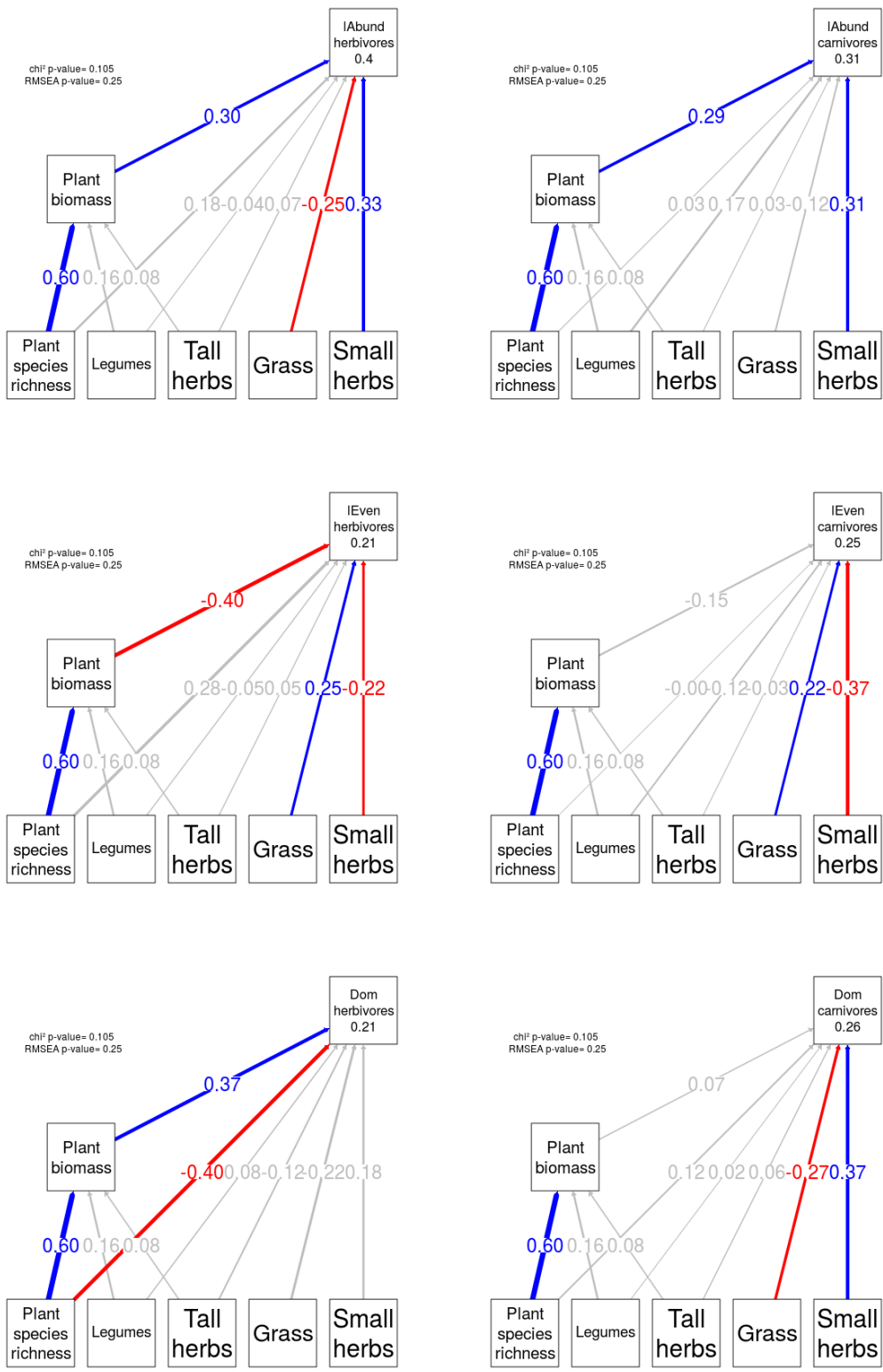


Figure B: SEM models on the unstandardized data, on the left side are the herbivores and on the right the carnivores, see the legend from Fig.2 in the main text for further informations.

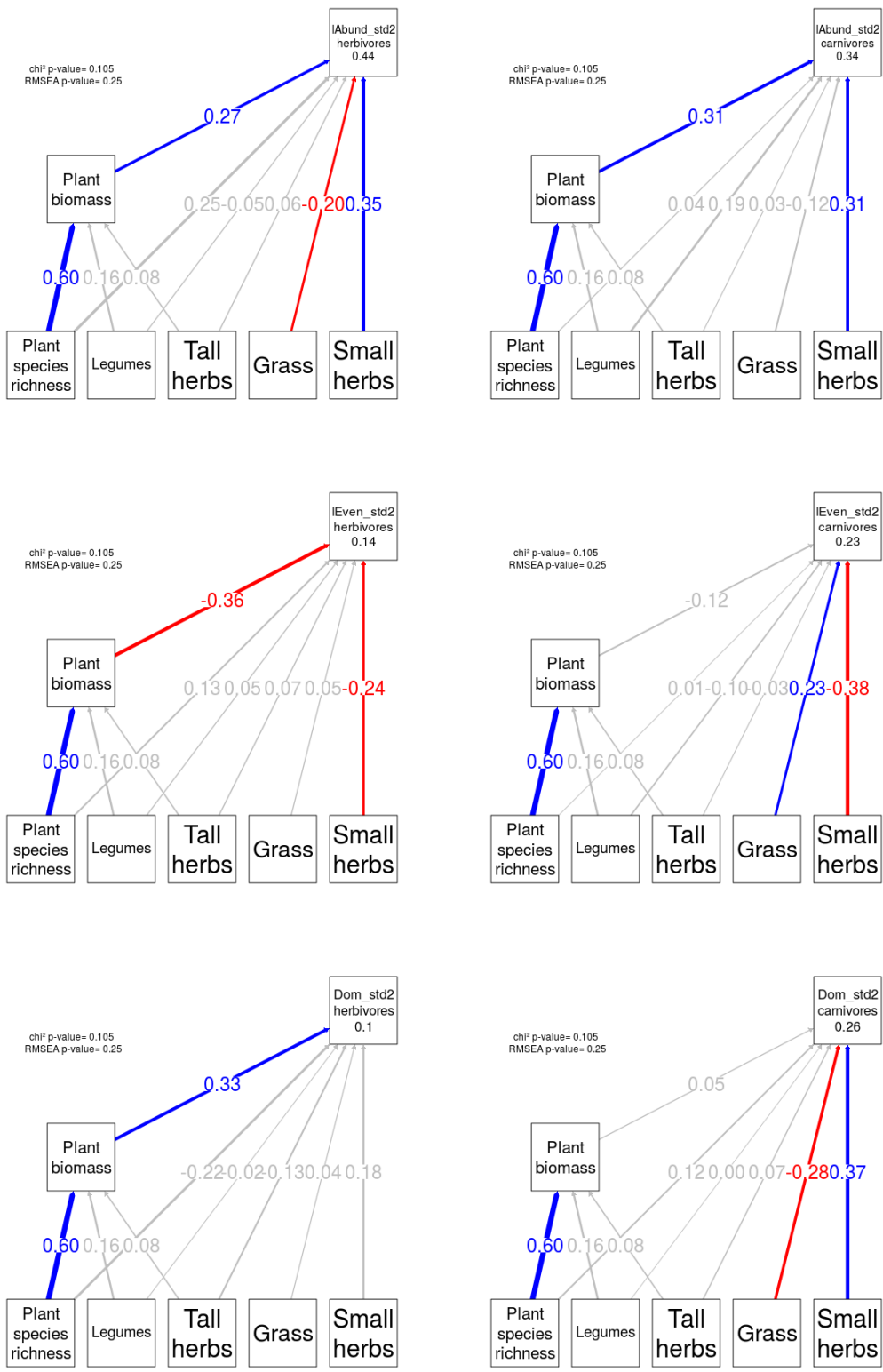


Figure C: SEM models on the standardized by the sum data, on the left side are the herbivores and on the right the carnivores, see the legend from Fig.2 in the main text for further informations.

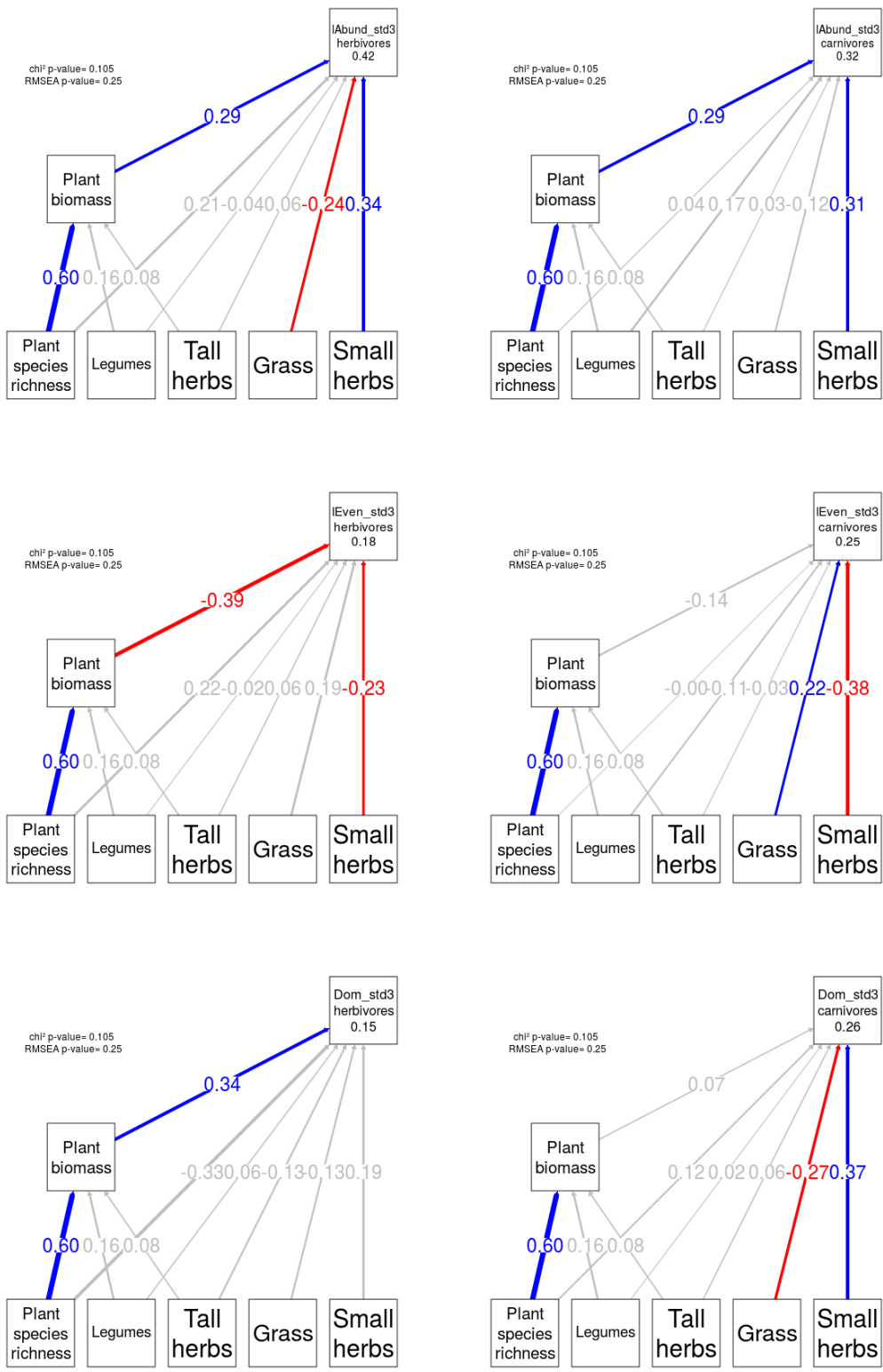


Figure D: SEM models on the standardized by the mean data, on the left side are the herbivores and on the right the carnivores, see the legend from Fig.2 in the main text for further informations.