

Supplementary material

Changes in Bird Community Structure on Mount Cameroon Driven by Elevational and Vertical Gradients

Solange Mekuete Kamga ^{1,*}, Simon Awafor Tamungang ^{1,2}, Taku Awa II ¹, Kryštof Chmel ³, Francis Luma Ewome ⁴, Lucas Lyonga Molua ⁴, Guillermo Uceda-Gómez ⁵, Štěpán Janeček ⁵, Jiří Mlíkovský ⁵ and Jan Riegert ⁶

¹ Laboratory of Applied Biology and Ecology, Faculty of Science, University of Dschang, Dschang 96, Cameroon; atamungang@yahoo.com (S.A.T.); takuawa@yahoo.co.uk (T.A.II)

² Department of Forestry and Wildlife Technology, College of Technology, University of Bamenda, Bambili 39, Cameroon

³ Biology Centre, Czech Academy of Sciences, Branišovská 1160/31, CZ-370 05 České Budějovice, Czech Republic; k.chmel@seznam.cz

⁴ Bokwango, Southwest Region, Buea 63, Cameroon; lumaescobar@yahoo.com (F.L.E.); lucasmolua@gmail.com (L.L.M.)

⁵ Department of Ecology, Faculty of Science, Charles University, Viničná 7, CZ-128 44 Prague, Czech Republic; guillermoug1203@gmail.com (G.U.-G.); janecek.stepan@centrum.cz (Š.J.); jmlikovsky@gmail.com (J.M.)

⁶ Department of Zoology, Faculty of Sciences, University of South Bohemia, Branišovská 1760, CZ-370 05 České Budějovice, Czech Republic; honza@riegert.cz

* Correspondence: kamgasolange1@gmail.com

Table S1. Checklist of bird species with their feeding guilds (C – carnivores, I – insectivores, O – omnivores, G – granivores, F – frugivores and N - nectarivores)

Scientific names	Feeding guilds
<i>Accipiter castanea</i>	C
<i>Accipiter erythropus</i>	C
<i>Accipiter melanoleucus</i>	C
<i>Alethe castanea</i>	I
<i>Chamaetylas poliocephala</i>	I
<i>Eurillas curvirostris</i>	O
<i>Eurillas gracilis</i>	O
<i>Eurillas latirostris</i>	O
<i>Eurillas virens</i>	O
<i>Anthreptes rectirostris</i>	O
<i>Anthus trivialis</i>	I
<i>Apalis cinerea</i>	I
<i>Apalis nigriceps</i>	I
<i>Apalis rufogularis</i>	I
<i>Columba larvata</i>	G
<i>Apus barbatus</i>	I
<i>Arizelocichla tephrolaema</i>	O
<i>Baeopogon clamans</i>	F
<i>Bleda notatus</i>	I
<i>Bleda syndactylus</i>	I
<i>Bradypterus lopezi</i>	I
<i>Buccanodon duchaillui</i>	F
<i>Camaroptera brachyuran</i>	I
<i>Camaroptera chloronota</i>	I
<i>Campethera nivosa</i>	I
<i>Cercococcyx mechowi</i>	I
<i>Ceuthmochares aereus</i>	O
<i>Ispidina lecontei</i>	I
<i>Cinnyris batesi</i>	N

<i>Cinnyris minullus</i>	N
<i>Cinnyris reichenowi</i>	N
<i>Cisticola chubby</i>	I
<i>Colius striatus</i>	O
<i>Columba sjostedti</i>	G
<i>Corythornis cristatus</i>	C
<i>Cossypha isabellae</i>	I
<i>Criniger calurus</i>	O
<i>Criniger chloronotus</i>	O
<i>Criniger ndussumensis</i>	O
<i>Crithagra burtoni</i>	G
<i>Cryptospiza reichenovii</i>	G
<i>Cuculus solitaries</i>	I
<i>Cyanomitra cyanaolaema</i>	O
<i>Cyanomitra olivacea</i>	N
<i>Cyanomitra oritis</i>	N
<i>Deleornis fraseri</i>	I
<i>Dicrurus atripennis</i>	I
<i>Dicrurus modestus</i>	I
<i>Dryoscopus angolensis</i>	I
<i>Platysteira castanea</i>	I
<i>Platysteira tonsa</i>	I
<i>Elminia albiventris</i>	I
<i>Estrilda nonnula</i>	G
<i>Euplectes capensis</i>	G
<i>Fraseria ocreata</i>	I
<i>Geokichla crossleyi</i>	I
<i>Glaucidium sjostedti</i>	O
<i>Halcyon badia</i>	I
<i>Hedydipna collaris</i>	I
<i>Hylia prasina</i>	I
<i>Telophorus multicolour</i>	I
<i>Chrysococcyx cupreus</i>	I

<i>Chrysococcyx klaas</i>	I
<i>Illadopsis fulvescens</i>	I
<i>Illadopsis rufipennis</i>	I
<i>Indicator conirostris</i>	O
<i>Indicator exilis</i>	O
<i>Indicator maculatus</i>	O
<i>Indicator willcocksi</i>	I
<i>Kakamega poliothorax</i>	I
<i>Laniarius atroflavus</i>	I
<i>Linurgus olivaceus</i>	G
<i>Macrosphenus flavicans</i>	I
<i>Mandingoa nitidula</i>	G
<i>Melignomon eisentrauti</i>	O
<i>Chloropicus elliotii</i>	I
<i>Muscicapa adusta</i>	I
<i>Fraseria olivascens</i>	I
<i>Muscicapa sethsmithi</i>	I
<i>Neocossyphus poensis</i>	I
<i>Nesocharis shelleyi</i>	G
<i>Nicator chloris</i>	I
<i>Nigrita bicolor</i>	I
<i>Nigrita canicapillus</i>	I
<i>Oriolus brachyrhynchus</i>	O
<i>Oriolus nigripennis</i>	O
<i>Parmoptila woodhousei</i>	O
<i>Phyllastrephus icterinus</i>	I
<i>Phyllastrephus poensis</i>	I
<i>Phylloscopus trochilus</i>	I
<i>Platysteira cyanea</i>	I
<i>Ploceus albinucha</i>	O
<i>Ploceus bicolor</i>	O
<i>Ploceus insignis</i>	O
<i>Ploceus melanogaster</i>	O

<i>Pogoniulus atroflavus</i>	F
<i>Pogoniulus bilineatus</i>	F
<i>Pogoniulus coryphaeus</i>	F
<i>Pogoniulus subsulphureus</i>	F
<i>Psolidoprocne fuliginosa</i>	I
<i>Sylvia abyssinica</i>	I
<i>Verreauxia Africana</i>	I
<i>Spermophaga haematina</i>	G
<i>Stiphornis erythrothorax</i>	I
<i>Neocossyphus fraseri</i>	I
<i>Sylvia atricapilla</i>	O
<i>Sylvia borin</i>	O
<i>Tauraco macrorhynchus</i>	F
<i>Terpsiphone rufiventer</i>	I
<i>Treron calvus</i>	F
<i>Trochocercus nitens</i>	I
<i>Turdus pelios</i>	O
<i>Turtur brehmeri</i>	G
<i>Turtur tympanistria</i>	G
<i>Urolais epichlorus</i>	I
<i>Zosterops melanocephalus</i>	O
<i>Zosterops senegalensis</i>	O

Table S2. Results of regressions on the effects of NLAG and vegetation cover on percentage of abundances of chosen bird species according to the PCNM analysis (n =18).

Independent variable	Species	beta	R ²	F	P
NLAG	<i>Arizelocichla tephrolaema</i>	0.32	0.10	19.69	<0.001
	<i>Cyanomitra olivacea</i>	0.51	0.26	26.99	<0.001
	<i>Eurillas latirostris</i>	0.37	0.13	6.88	0.010
	<i>Eurillas virens</i>	0.58	0.34	9.35	0.006
	<i>Macrosphenus flavicans</i>	0.56	0.32	10.54	0.003
	<i>Terpsiphone rufiventer</i>	0.64	0.40	13.89	0.001
Vegetation cover	<i>Cryptospiza reichenovii</i>	-0.74	0.54	10.59	0.009
	<i>Cyanomitra olivacea</i>	-0.59	0.35	40.90	<0.001
	<i>Campethera nivos</i>	-0.62	0.38	9.52	0.007
	<i>Chamaetylas poliocephala</i>	-0.39	0.15	5.72	0.020
	<i>Hedydipna collaris</i>	-0.67	0.45	6.64	0.030
	<i>Eurillas latirostris</i>	-0.54	0.29	17.69	<0.001
	<i>Eurillas virens</i>	-0.48	0.23	5.42	0.030
	<i>Macrosphenus flavicans</i>	-0.61	0.36	12.81	0.001
	<i>Stiphrornis erythrothorax</i>	-0.80	0.64	14.54	0.005
	<i>Terpsiphone rufiventer</i>	-0.55	0.30	8.80	0.007
	<i>Turtur tympanistria</i>	-0.49	0.24	7.45	0.010
	<i>Urolais epichlorus</i>	-0.45	0.20	5.00	0.030

Table S3. Comparison of percentages of bird abundances within feeding guilds between Drink Garri and Mann's Spring (n = 34). Mann-Whitney U tests.

Feeding guild	U	P
Frugivores	380	0.001
Omnivores	361	<0.001
Insectivores	331	<0.001
Granivores	822	<0.001
Nectarivores	411	<0.001

Table S4. Effect of environmental variables on percentage of individuals within each feeding guilds. Regressions (n = 34).

Independent variable	Feeding guild	Beta	R ²	F	P
NLAG (m)	Frugivores	0.42	0.18	6.77	0.014
	Omnivores	0.32	0.10	32.31	<0.001
	Nectarivores	0.31	0.10	23.59	<0.001
Vegetation cover (%)	Frugivores	-0.43	0.18	6.71	0.010
	Omnivores	-0.16	0.02	7.21	0.007
	Insectivores	-0.15	0.02	6.84	0.009
	Granivores	-0.26	0.07	7.66	0.006
	Nectarivores	-0.38	0.14	35.91	<0.001

Figure S1. The distribution of mist netting sites within Driung Garri and Mann's Spring. ESRI hillshade base map was used to create a figure.

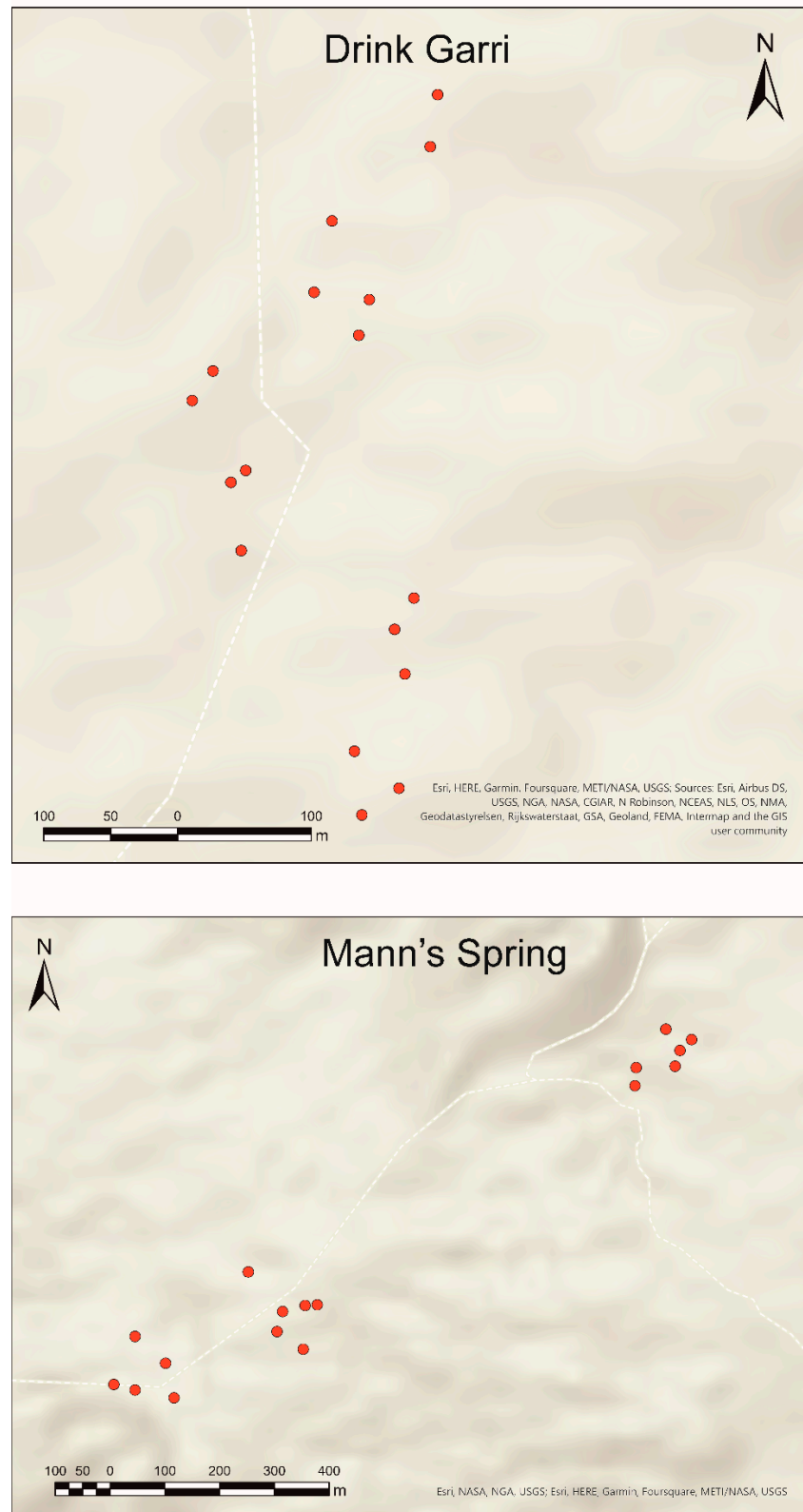


Figure S2. The relationship between vegetation cover and NLAG for a) Drink Garri and b) Mann's Spring.

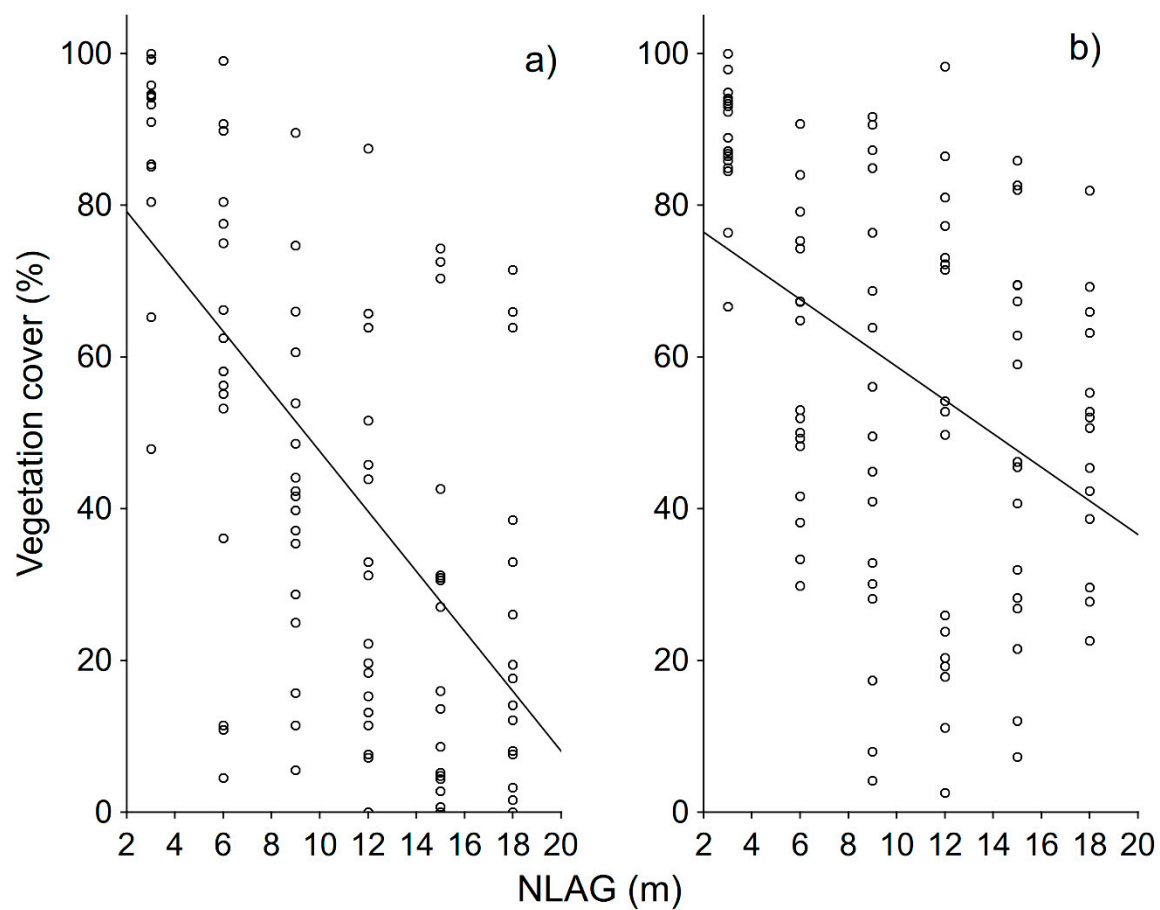


Figure S3. Relationships between percentages of abundances and NLAG for a) *Arizelocichla tephrolaema*, b) *Macrosphenus flavicans*, c) *Terpsiphone rufiventer* and vegetation cover: d) *Cyanomitra olivacea*, e) *Eurillas latirostris* and f) *Urolais epichlorus*.

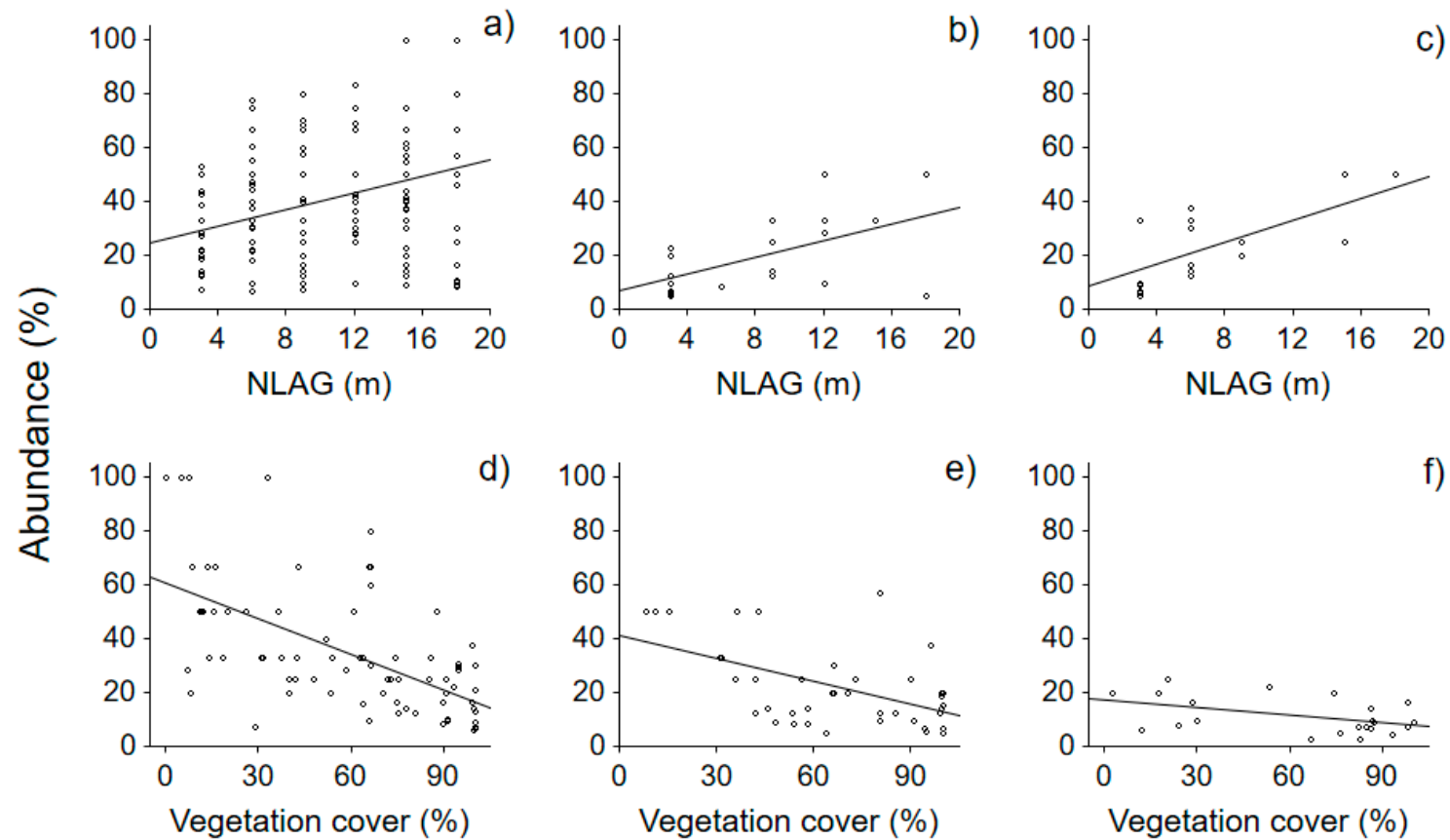


Figure S4. Differences in percentages of abundances of species dietary guilds between Drink Garri and Mann's Spring for a) frugivores, b) granivores, c) insectivores, d) nectarivores and e) omnivores.

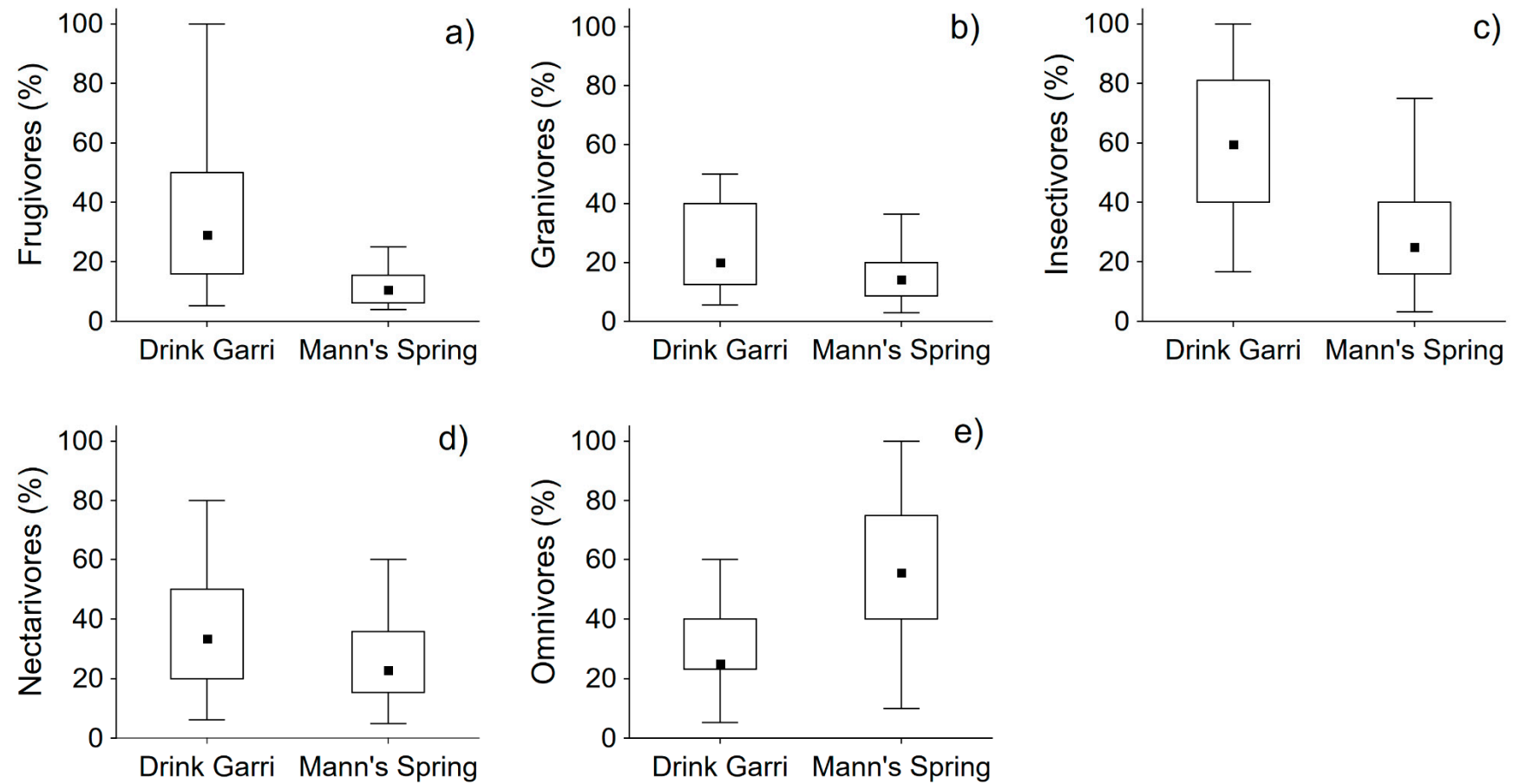


Figure S5. Differences in percentages of abundances of species from feeding guilds with vegetation cover for a) frugivores, b) omnivores, c) insectivores, d) granivores and e) nectarivores.

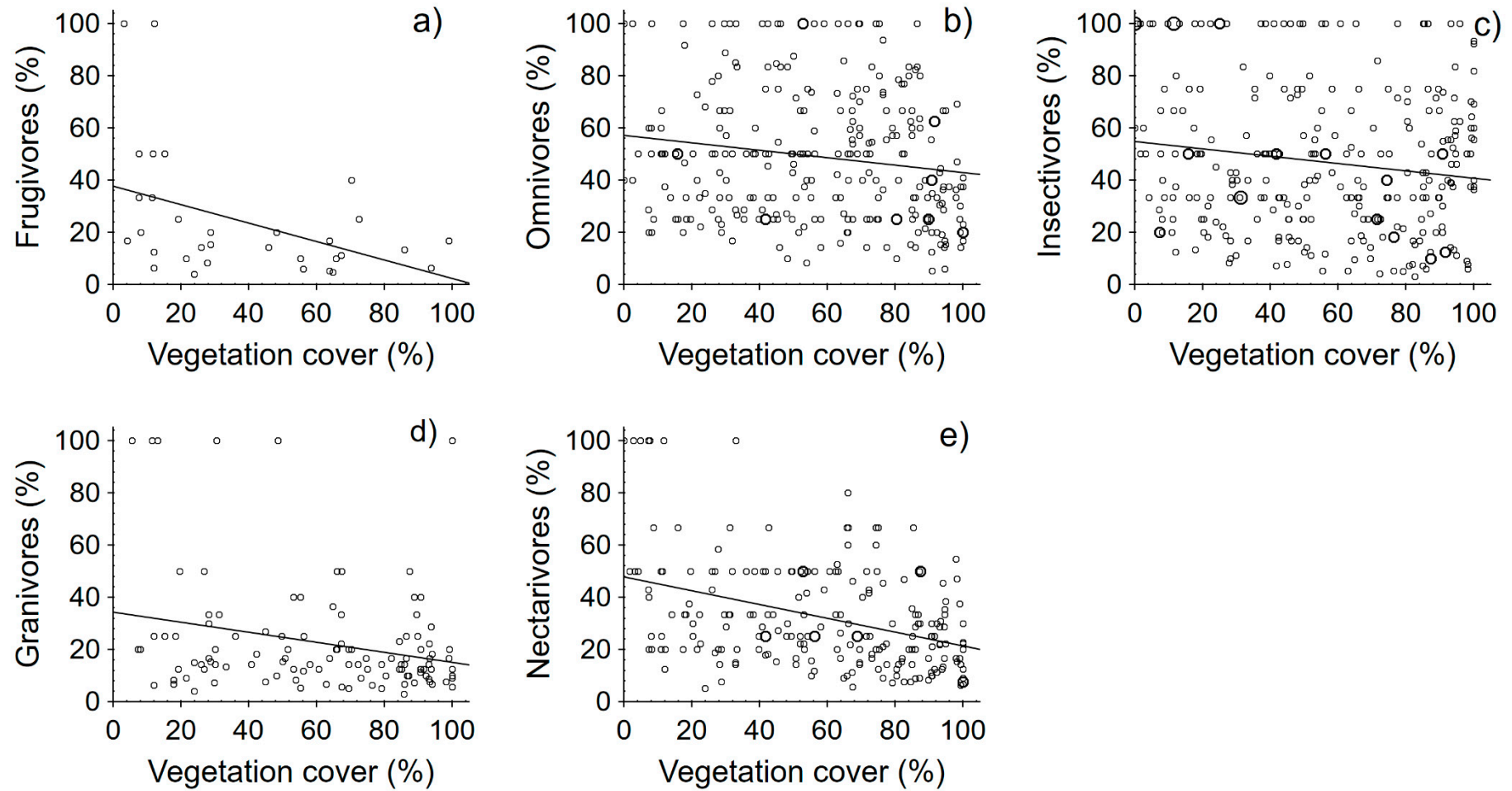


Figure S6. Relationships between percentages of abundances and NLAG for a) frugivores, b) nectarivores and c) omnivores.

