

Grass, I., Berens, D. G. and Farwig, N. 2013.
 Guild-specific shifts in visitation rates of
 frugivores with habitat loss and plant invasion. –
 Oikos 000: 000–000.

Appendix A1

Table A1. Observed plant species during plant-frugivore observations. Species are sorted by scientific names.

Common name	Scientific name	Family	Plant origin
Tassel-berry	<i>Antidesma venosum</i>	Euphorbiaceae	native
White-pear	<i>Apodytes dimidiata</i>	Icacinaceae	native
Mitzeeri sweetberry	<i>Bridelia micrantha</i>	Euphorbiaceae	native
White-stinkwood	<i>Celtis africana</i>	Celtidaceae	native
Camphor tree	<i>Cinnamomum camphora</i>	Lauraceae	invasive
Forest croton	<i>Croton sylvaticus</i>	Euphorbiaceae	native
Forest coca-tree	<i>Erythroxylum pictum</i>	Erythroxylaceae	native
Common wild fig	<i>Ficus burkei</i>	Moraceae	native
Mountain rock fig	<i>Ficus glumosa</i>	Moraceae	native
Red-leaf rock fig	<i>Ficus ingens</i>	Moraceae	native
Cape rfg	<i>Ficus sur</i>	Moraceae	native
Lantana	<i>Lantana camara</i>	Verbenaceae	invasive
River macaranga	<i>Macaranga capensis</i>	Euphorbiaceae	native
False-assegai	<i>Maesa lanceolata</i>	Myrsinaceae	native
Black bird-berry	<i>Psychotria capensis</i>	Rubiaceae	native
Bugweed	<i>Solanum mauritianum</i>	Solanaceae	invasive
Waterberry	<i>Syzigium cordatum</i>	Myrtaceae	native
White-ironwood	<i>Vepris lanceolata</i>	Rutaceae	native

Table A2. Forest dependency, degree of frugivory and number of interactions of frugivore species observed feeding on fruit of plant species during plant-frugivore observations.

Abbreviations of forest dependency: FS = forest specialist; FG = forest generalist; FV = forest visitor..

Common name	Scientific name	Forest dependency	Degree of frugivory	Interactions
African dusky flycatcher	<i>Muscicapa adusta</i>	FG	opportunistic	1
African green-pigeon	<i>Treron calvus</i>	FG	obligate	3
African olive pigeon	<i>Columba arquatrix</i>	FS	partial	9
African stonechat	<i>Saxicola torquatus</i>	FV	opportunistic	2
Ashy flycatcher	<i>Muscicapa caerulescens</i>	FG	opportunistic	60
Black-bellied starling	<i>Lamprotornis corruscus</i>	FV	partial	17
Black-collared Barbet	<i>Lybius torquatus</i>	FG	obligate	55
Black-headed oriole	<i>Oriolus larvatus</i>	FG	partial	24
Cape glossy starling	<i>Lamprotornis nitens</i>	FG	partial	32
Cape weaver	<i>Ploceus capensis</i>	FV	opportunistic	1
Cape white-eye	<i>Zosterops pallidus</i>	FG	partial	532
Chorister robin-chat	<i>Cossypha dichroa</i>	FS	opportunistic	4
Dark-backed weaver	<i>Ploceus bicolor</i>	FS	partial	15
Dark-capped bulbul	<i>Pycnonotus barbatus</i>	FG	obligate	265
Forest canary	<i>Serinus scotops</i>	FG	partial	1
Golden weaver	<i>Ploceus xanthops</i>	FG	partial	1
Green wood-hoopoe	<i>Phoeniculus purpureus</i>	FG	opportunistic	9
Grey sunbird	<i>Nectarinia veroxii</i>	FS	opportunistic	1
Knysna turaco	<i>Tauraco corythaix</i>	FS	obligate	71
Kurriichane thrush	<i>Turdus libonyanus</i>	FG	opportunistic	2
Marsh warbler	<i>Acrocephalus palustris</i>	FV	opportunistic	1
Olive sunbird	<i>Nectarinia olivacea</i>	FG	partial	4
Olive thrush	<i>Turdus olivaceus</i>	FG	partial	48
Red-eyed dove	<i>Streptopelia semitorquata</i>	FG	opportunistic	1
Red-fronted tinkerbird	<i>Pogoniulus pusillus</i>	FG	obligate	2
Red-winged starling	<i>Onychognathus morio</i>	FV	partial	18
Sombre greenbul	<i>Andropadus importunus</i>	FS	obligate	22
Southern black flycatcher	<i>Melaenornis pammelaina</i>	FG	opportunistic	6
Southern black tit	<i>Parus niger</i>	FG	opportunistic	1
Southern boubou	<i>Laniarius ferrugineus</i>	FG	opportunistic	1
Speckled mousebird	<i>Colius striatus</i>	FG	obligate	152
Spectacled weaver	<i>Ploceus ocularis</i>	FG	opportunistic	2
Spotted flycatcher	<i>Muscicapa striata</i>	FG	opportunistic	1
Square-tailed drongo	<i>Dicrurus ludwigii</i>	FS	opportunistic	4
Streaky-headed seedeater	<i>Serinus gularis</i>	FV	partial	2
Tambourine dove	<i>Turtur tympanistria</i>	FS	partial	18
Terrestrial brownbul	<i>Phyllastrephus terrestris</i>	FS	opportunistic	9
Trumpeter hornbill	<i>Bycanistes bucinator</i>	FG	obligate	28
Village weaver	<i>Ploceus cucullatus</i>	FV	partial	3
White-bellied sunbird	<i>Nectarinia talatala</i>	FG	opportunistic	1
Yellow-fronted canary	<i>Serinus mozambicus</i>	FG	opportunistic	6
Yellow-rumped tinkerbird	<i>Pogoniulus bilineatus</i>	FS	obligate	11

1 Table A3. First 30 models of the model set used for model selection to predict guild-specific
 2 changes in frugivore visitation rates, with frugivore guilds divided by forest dependency (104
 3 models in total). Inclusion of a predictor in a given model is indicated by a plus sign.

Inter- cept	FA	PO	FD	HL	IL	FD × PO	FD × HL	FD × IL	HL × IL	FD × HL × IL	k	logLik	AIC _c	Delta AIC _c	Model weight
+	+		+	+	+		+	+			13	-185.25	399.76	0.00	0.339
+	+	+	+	+	+		+	+			14	-184.18	400.15	0.39	0.279
+	+		+	+	+		+	+	+		14	-185.02	401.82	2.06	0.121
+	+	+	+	+	+		+	+	+		15	-183.95	402.27	2.51	0.097
+	+	+	+	+	+	+	+	+			16	-182.69	402.37	2.61	0.092
+	+	+	+	+	+	+	+	+	+		17	-182.46	404.59	4.83	0.030
+	+		+	+	+		+	+	+	+	16	-184.14	405.28	5.52	0.021
+	+	+	+	+	+		+	+	+	+	17	-183.07	405.81	6.05	0.016
+	+	+	+	+	+	+	+	+	+	+	19	-181.71	408.59	8.84	0.004
+	+	+	+		+	+		+			13	-195.36	419.97	20.21	0.000
+	+	+	+		+			+			11	-198.17	420.66	20.90	0.000
+	+		+		+			+			10	-199.39	420.68	20.92	0.000
+	+		+	+			+				10	-200.27	422.45	22.69	0.000
+	+	+	+	+	+	+		+			14	-195.34	422.47	22.71	0.000
+	+	+	+	+			+				11	-199.33	422.98	23.22	0.000
+	+		+	+	+			+			11	-199.37	423.05	23.29	0.000
+	+	+	+	+	+			+			12	-198.15	423.07	23.31	0.000
+	+	+	+	+		+	+				13	-197.27	423.79	24.03	0.000
+	+	+	+	+	+	+		+	+		15	-195.18	424.72	24.96	0.000
+	+		+	+	+		+				11	-200.25	424.82	25.06	0.000
+	+		+	+	+			+	+		12	-199.20	425.16	25.40	0.000
+	+	+	+	+	+			+	+		13	-197.99	425.23	25.47	0.000
+	+	+	+	+	+		+				12	-199.32	425.40	25.64	0.000
+	+	+	+	+	+	+	+				14	-197.26	426.30	26.54	0.000
+	+		+	+	+		+		+		12	-199.80	426.37	26.61	0.000
+	+	+	+	+	+		+		+		13	-198.87	427.00	27.24	0.000
+	+	+	+	+	+	+	+		+		15	-196.82	427.99	28.23	0.000
+	+	+	+			+					10	-210.23	442.38	42.62	0.000
+	+		+								7	-214.16	443.27	43.51	0.000
+	+	+	+								8	-213.13	443.49	43.73	0.000

4 FA = Fruit abundance, PO = Plant origin, FD = Forest dependency, HL = Habitat loss, IL = Invasion level,

5 k = number of parameters in each model, × = interaction

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7 Table A4. First 30 models of the model set used for model selection to predict guild-specific
8 changes in frugivore visitation rates, with frugivore guilds divided by degree of frugivory (104
9 models in total). Inclusion of a predictor in a given model is indicated by a plus sign.

Inter- cept	FA	PO	DOF	HL	IL	DOF × PO	DOF × HL	DOF × IL	HL × IL	DOF × HL × IL	k	logLik	AIC _c	Delta AIC _c	Model weight
+	+		+	+	+		+	+	+	+	16	-215.33	467.64	0.00	0.631
+	+	+	+	+	+		+	+	+	+	17	-214.73	469.13	1.49	0.299
+	+		+	+	+		+	+			13	-222.44	474.12	6.48	0.025
+	+	+	+	+	+	+	+	+	+	+	19	-214.67	474.52	6.88	0.020
+	+	+	+	+	+		+	+			14	-221.93	475.65	8.00	0.012
+	+		+	+	+		+	+	+		14	-222.26	476.31	8.66	0.008
+	+	+	+	+	+		+	+	+		15	-221.76	477.88	10.23	0.004
+	+	+	+	+	+	+	+	+			16	-221.92	480.83	13.19	0.001
+	+	+	+	+	+	+	+	+	+		17	-221.75	483.16	15.52	0.000
+	+		+	+			+				10	-231.63	485.18	17.53	0.000
+	+	+	+	+			+				11	-231.09	486.50	18.86	0.000
+	+		+	+	+		+				11	-231.62	487.55	19.90	0.000
+	+	+	+	+	+		+				12	-231.08	488.91	21.27	0.000
+	+		+		+			+			10	-233.68	489.27	21.63	0.000
+	+		+	+	+		+		+		12	-231.28	489.32	21.68	0.000
+	+	+	+		+			+			11	-233.12	490.55	22.91	0.000
+	+	+	+	+	+		+		+		13	-230.75	490.74	23.10	0.000
+	+	+	+	+		+	+				13	-231.06	491.38	23.73	0.000
+	+		+	+	+			+			11	-233.66	491.64	24.00	0.000
+	+	+	+	+	+			+			12	-233.10	492.96	25.32	0.000
+	+		+	+	+			+	+		12	-233.48	493.72	26.07	0.000
+	+	+	+	+	+	+	+				14	-231.05	493.88	26.24	0.000
+	+	+	+	+	+			+	+		13	-232.92	495.09	27.44	0.000
+	+	+	+		+	+		+			13	-233.04	495.32	27.68	0.000
+	+	+	+	+	+	+	+		+		15	-230.72	495.80	28.16	0.000
+	+	+	+	+	+	+		+			14	-233.02	497.83	30.18	0.000
+	+	+	+	+	+	+		+	+		15	-232.84	500.04	32.39	0.000
+	+		+								7	-243.98	502.90	35.26	0.000
+	+	+	+								8	-243.37	503.96	36.32	0.000
+	+		+	+							8	-243.89	505.02	37.37	0.000

10 FA = Fruit abundance, PO = Plant origin, DOF = Degree of frugivory, HL = Habitat loss, IL = Invasion level,

11 k = number of parameters in each model, × = interaction

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