

Supplementary material

Appendix 1

Table A1 Biological traits of the nectarivorous birds of Cape Town. The frequencies of species are across all gardens. Body mass is in grams, longevity in years. Nectar rank is the importance of nectar in their diet, with a rank of 3 indicating the greatest importance of nectar. Diet diversity refers to number of food types a species uses (invertebrates, nectar, fruit etc.)

Species	Frequency	Body mass	Longevity	Habitats used	Nectar rank	Diet diversity	Clutch size	Nest site	Foraging group
<i>Promerops cafer</i>	0.288	34.5	12.2	2	3	2	2	shrub	pairs
<i>Anthobaphes violacea</i>	0.188	9	6	3	3	2	1.69	shrub	pairs
<i>Cinnyris chalybeus</i>	0.864	8	8.5	7	3	2	2.2	shrub	pairs
<i>Nectarinia famosa</i>	0.534	17.5	10	7	3	2	2	shrub	group
<i>Zosterops virens</i>	0.906	13.5	12.66	7	2	4	3	tree	group
<i>Pycnonotus capensis</i>	0.733	39	8	6	1	5	2.74	shrub	group
<i>Ploceus capensis</i>	0.613	46	7.58	4	1	5	2.6	tree	group
<i>Sturnus vulgaris</i>	0.492	75	20	1	1	6	4.4	adaptable	group
<i>Onychognathus morio</i>	0.335	135	7.5	8	1	7	3	adaptable	group

Table A2 The associations between the garden trait predictor variables were tested during data exploration. Spearman rank correlations, Kruskal-Wallis rank sum tests and Pearson’s Chi-square tests were used and the resultant p-values are provided here. Significant associations are highlighted in bold.

Predictor variables	1	2	3	4	5	6	7	8	9	10
1. distance to PA										
2. distance to park	0.09									
3. matrix	0.078	0.002								
4. planted area	0.684	0.077	0.005							
5. cats	0.385	0.256	0.522							
6. dogs	0.817	0.63	0.368	0.004						
7. indigenous plants	0.725	0.008	0.029	<0.0001	0.375	0.154				
8. introduced plants	0.17	0.34	0.98	0.000	0.92	0.45	0.000			
9. sugar water feeder	0.013	0.763	1	0.3232	0.418	0.850	0.403	0.345		
10. other feeders	0.728	0.939	0.657	0.9937	0.035	0.957	0.525	0.073	<0.0001	
11. bird bath	0.740	0.72	0.410	0.0556	0.232	0.930	0.097	0.009	<0.0001	<0.0001

1 **Table A3** The complete model set testing which biological traits of nine nectarivorous bird
 2 species predict their abundances in gardens. Models were tested with Generalised Linear
 3 Models fitted with binomial error structures. For each model the number of parameters (K),
 4 log likelihood (L), Akaike Information Criterion (AICc), difference in AICc from the best
 5 model and Akaike weight (w_i) is presented.

Model ^a	K	L	AICc	Δ AICc	w_i
habitats + nest site	4	-62.77	146.88	0	1
longevity + habitats	3	-155.91	323.82	176.941	0
habitats	2	-176.58	359.57	212.693	0
habitats + nectar rank	3	-176.27	364.54	217.66	0
nectar rank + nest site	4	-171.99	365.31	218.437	0
longevity + nest site	4	-175.43	372.19	225.312	0
nest site	3	-180.3	372.59	225.715	0
longevity + nectar rank	3	-197.77	407.55	260.672	0
longevity	2	-215.19	436.77	289.895	0
nectar rank	2	-228.02	462.44	315.565	0

6 ^ahabitats = number of habitats used by a species; nest site = tree, shrub or adaptable; nectar
 7 rank = importance of nectar in the diet

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11 **Table A4** The complete set of models fitted to identify associations between abundances of
 12 nectarivorous bird and garden traits. Predictions were made for the number of birds and the
 13 number of species for generalist and specialist species separately. For each model the number
 14 of parameters (K), log likelihood (L), Akaike Information Criterion (AICc), difference in
 15 AICc from the best model and Akaike weight (w_i) are presented.

Model ^a	K	L	AICc	Δ AICc	w_i
No. of specialist birds					
indig. plants + sugar water feeder	4	-495	998.24	0	0.712
sugar water feeder × indig. plants	5	-494.94	1000.24	2	0.262
indig. plants + bird bath	4	-499.23	1006.7	8.461	0.01
distance PA + sugar water feeder	4	-500.04	1008.31	10.072	0.005
indig. plants	3	-501.19	1008.51	10.274	0.004
matrix × distance PA	5	-499.75	1009.85	11.607	0.002
distance PA + matrix	4	-501.44	1011.12	12.881	0.001
planted area × distance PA	5	-500.48	1011.31	13.073	0.001
sugar water feeder + matrix	4	-501.6	1011.44	13.2	0.001
distance PA + planted area	4	-502.03	1012.3	14.063	0.001
distance PA	3	-504.09	1014.32	16.083	0
planted area + sugar water feeder	4	-503.6	1015.43	17.186	0
sugar water feeder	3	-505.05	1016.24	17.997	0
other feeders + sugar water feeder	4	-504.39	1017.02	18.781	0
intro. plants + sugar water feeder	4	-505	1018.23	19.994	0
sugar water feeder × intro. plants	5	-504.88	1020.11	21.868	0
matrix	3	-507.41	1020.95	22.711	0
bird bath	3	-507.93	1022.01	23.766	0
planted area + bird bath	4	-506.92	1022.08	23.838	0
other feeders + bird bath	4	-507.87	1023.98	25.735	0
intro. plants + bird bath	4	-507.93	1024.09	25.847	0
planted area	3	-509.93	1026	27.762	0
dogs	3	-510.36	1026.87	28.626	0
intro. plants	3	-511.25	1028.64	30.397	0
other feeders	3	-511.28	1028.7	30.459	0
cats + dogs	4	-510.36	1028.95	30.708	0
cats	3	-511.51	1029.16	30.924	0
No. of specialist species					
indig. plants + bird bath	3	-275.56	557.26	0	0.39
indig. plants + sugar water feeder	3	-275.74	557.62	0.357	0.326
sugar water feeder × indig. plants	4	-275.48	559.19	1.93	0.149
indig. plants	2	-277.69	559.46	2.193	0.13
sugar water feeder + matrix	3	-280.93	567.99	10.73	0.002
planted area + bird bath	3	-281.72	569.58	12.32	0.001
bird bath	2	-283.57	571.21	13.945	0

Model ^a	K	L	AICc	ΔAICc	w _i
matrix	2	-283.61	571.29	14.025	0
distance PA + matrix	3	-282.88	571.91	14.643	0
planted area + sugar water feeder	3	-282.92	571.98	14.722	0
planted area × distance PA	4	-281.95	572.14	14.875	0
other feeders + bird bath	3	-283.49	573.12	15.857	0
intro. plants + bird bath	3	-283.51	573.17	15.904	0
distance PA + planted area	3	-283.84	573.82	16.554	0
matrix × distance PA	4	-282.83	573.89	16.625	0
planted area	2	-285.52	575.11	17.849	0
sugar water feeder	2	-285.55	575.18	17.915	0
distance PA + sugar water feeder	3	-285.01	576.16	18.893	0
intro. plants + sugar water feeder	3	-285.11	576.36	19.102	0
other feeders + sugar water feeder	3	-285.41	576.96	19.701	0
distance PA	2	-286.97	578	20.741	0
other feeders	2	-287.17	578.41	21.147	0
sugar water feeder × intro. plants	4	-285.11	578.46	21.196	0
intro. plants	2	-287.5	579.07	21.809	0
dogs	2	-287.95	579.96	22.701	0
cats	2	-288.14	580.36	23.098	0
cats + dogs	3	-287.95	582.03	24.772	0
No. of opportunistic birds					
distance PA + planted area	4	-669.86	1347.95	0	0.546
planted area × distance PA	5	-669.55	1349.45	1.5	0.258
planted area + sugar water feeder	4	-671.41	1351.06	3.104	0.116
indig. plants + sugar water feeder	4	-672.42	1353.07	5.123	0.042
sugar water feeder + indig. plants	5	-671.85	1354.05	6.101	0.026
intro. plants + sugarwaterfeeder	4	-674.91	1358.06	10.108	0.003
planted area	3	-676.51	1359.16	11.21	0.002
indig. plants	3	-676.75	1359.63	11.682	0.002
sugar water feeder × intro. plants	5	-674.82	1360	12.051	0.001
distance PA + sugar water feeder	4	-676.31	1360.85	12.902	0.001
planted area + bird bath	4	-676.31	1360.86	12.91	0.001
indig. plants + bird bath	4	-676.62	1361.48	13.524	0.001
other feeders + sugar water feeder	4	-677.07	1362.37	14.419	0
distance PA	3	-678.52	1363.19	15.235	0
intro. plants	3	-678.8	1363.75	15.797	0
sugar water feeder	3	-678.83	1363.8	15.85	0
distance PA + matrix	4	-678.27	1364.77	16.82	0
sugar water feeder + matrix	4	-678.51	1365.25	17.297	0
intro. plants + bird bath	4	-678.74	1365.71	17.762	0
matrix × distance PA	5	-678.26	1366.87	18.919	0
bird bath	3	-682.28	1370.7	22.748	0
matrix	3	-682.47	1371.07	23.12	0
dogs	3	-682.5	1371.14	23.187	0
other feeders	3	-682.58	1371.31	23.356	0

Model ^a	K	L	AICc	ΔAICc	w _i
other feeders + bird bath	4	-681.68	1371.59	23.639	0
cats	3	-682.9	1371.95	23.999	0
cats + dogs	4	-682.5	1373.23	25.277	0
No. of opportunistic species					
sugar water feeder × indig. plants	4	-281.61	571.45	0	0.52
indig. plants + sugar water feeder	3	-283.53	573.21	1.758	0.216
indig. plants + bird bath	3	-283.67	573.49	2.035	0.188
indig. plants	2	-286.66	577.4	5.943	0.027
planted area + bird bath	3	-286.33	578.8	7.346	0.013
bird bath	2	-287.77	579.61	8.157	0.009
planted area + sugar water feeder	3	-286.88	579.91	8.455	0.008
intro. plants + bird bath	3	-287.34	580.82	9.365	0.005
other feeders + bird bath	3	-287.61	581.35	9.901	0.004
intro. plants + sugar water feeder	3	-287.89	581.93	10.475	0.003
sugar water feeder	2	-289.05	582.16	10.71	0.002
sugar water feeder × intro. plants	4	-287.6	583.43	11.98	0.001
sugar water feeder + matrix	3	-288.73	583.6	12.145	0.001
distance PA + sugar water feeder	3	-288.85	583.84	12.392	0.001
other feeders + sugar water feeder	3	-288.88	583.91	12.455	0.001
distance PA + planted area	3	-289.45	585.04	13.584	0.001
planted area	2	-290.55	585.16	13.709	0.001
planted area × distance PA	4	-289.09	586.42	14.969	0
intro. plants	2	-291.19	586.46	15.006	0
other feeders	2	-291.43	586.93	15.477	0
distance PA	2	-291.97	588.01	16.555	0
matrix	2	-292.42	588.92	17.466	0
dogs	2	-292.61	589.29	17.835	0
cats	2	-292.71	589.48	18.028	0
distance PA + matrix	3	-291.77	589.67	18.221	0
cats + dogs	3	-292.6	591.34	19.882	0
matrix × distance PA	4	-291.71	591.65	20.2	0

16 ^adistance PA = distance to nearest protected area; distance park = distance to nearest
17 vegetated greenbelt; planted area = size of planted area in garden; matrix = predominant
18 landscape between garden and protected area (natural/non-natural); other feeders = seed, fruit
19 & worm birdfeeders; indig. Plants = number of indigenous plants; intro. plants = number of
20 introduced plants.

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