

# Supporting Information

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**Table S1.** Species recorded during 10-min point counts at urban study properties in northern Auckland, New Zealand, over an experimental bird feeding study

Species	Scientific name	Primary diet*	Overall richness measures	Community analysis	Species response GLMMs	Occupancy overall (%)
House sparrow <sup>†</sup>	<i>Passer domesticus</i>	G	X	X	X	96.6
Eurasian blackbird <sup>†</sup>	<i>Turdus merula</i>	I, F	X	X	X	91.1
Silveryeye	<i>Zosterops lateralis</i>	I, F, N	X	X	X	90.8
Common myna <sup>†</sup>	<i>Acridotheres tristis</i>	O	X	X	X	87.4
Tūī	<i>Prosthemadera novaeseelandiae</i>	N	X	X	X	69.3
Spotted dove <sup>†</sup>	<i>Streptopelia chinensis</i>	G	X	X	X	65.2
Common starling <sup>†</sup>	<i>Sturnus vulgaris</i>	I, F	X	X	X	54.8
Song thrush <sup>†</sup>	<i>Turdus philomelos</i>	I, F	X	X	X	48.9
Eastern rosella <sup>†</sup>	<i>Platycercus eximius</i>	G, F, H	X	X	X	34.7
Grey warbler	<i>Gerygone igata</i>	I	X	X	X	32.8
New Zealand fantail	<i>Rhipidura fuliginosa</i>	I	X	X	X	25.3
Chaffinch <sup>†</sup>	<i>Fringilla coelebs</i>	G, I, F	X	X	X	16.2
Welcome swallow	<i>Hirundo neoxena</i>	I	X	X		11.7
Goldfinch <sup>†</sup>	<i>Carduelis carduelis</i>	G	X	X		11.6
New Zealand kingfisher	<i>Todiramphus sancta</i>	I, C	X	X		9.2
Southern black-backed gull	<i>Larus dominicanus</i>	C, O	X	X		8.4
Greenfinch <sup>†</sup>	<i>Carduelis chloris</i>	G	X	X		6.4
New Zealand pigeon	<i>Hemiphaga novaeseelandiae</i>	F, H	X			4.4
Barbary dove <sup>†</sup>	<i>Streptopelia roseogrisea</i>	G	X			2.3
Spur-winged plover	<i>Vanellus miles</i>	I				2.3
Red-billed gull	<i>Larus novaehollandiae</i>	I, C	X			2.0
Shining cuckoo	<i>Chrysococcyx lucidus</i>	I	X			1.7
Australian magpie <sup>†</sup>	<i>Gymnorhina tibicen</i>	I, O	X			1.2
Yellowhammer <sup>†</sup>	<i>Emberiza citrinella</i>	G, I	X			1.0
Rock pigeon <sup>†</sup>	<i>Columba livia</i>	G	X			0.8
Mallard <sup>†</sup>	<i>Anas platyrhynchos</i>	H	X			0.8
Australasian harrier	<i>Circus approximans</i>	C				0.5
Variable oystercatcher	<i>Haematopus unicolor</i>	M, I				0.5
Pukeko	<i>Porphyrio porphyrio</i>	H, O				0.3
Californian quail <sup>†</sup>	<i>Callipepla californica</i>	G, H, I				0.3
Pheasant <sup>†</sup>	<i>Phasianus colchicus</i>	H, G, I				0.3
Pied stilt	<i>Himantopus himantopus</i>	I				0.2
White-faced heron	<i>Ardea novaehollandiae</i>	C, I				0.0

Species are listed in order of the most frequently observed (given as a percentage of all counts,  $n = 597$ ). An indication of which species have been included for each analysis is also given.

\*Primary dietary component/s [derived from Heather and Robertson (1)]: C, carnivore (vertebrate prey); F, frugivore; G, granivore; H, herbivore; I, insectivore (insect and invertebrate prey); M, molluscivore; N, nectarivore; O, omnivore (broad diet which may include invertebrates, lizards, chicks, eggs, carrion, fruit, seeds, refuse or waste); NB, main dietary component listed first where two or more components given.

<sup>†</sup>Introduced species.

1. Heather B, Robertson H (1996) *The Field Guide to the Birds of New Zealand* (Viking, Auckland).

**Table S2.** Summary of GLMM results testing the effect of an experimental feeding regime on community structure measures and individual species abundances at urban study properties in northern Auckland, New Zealand

Distribution <sup>†</sup>	Nonfeeding	Before	After	Experimental group × period interaction (reference level: during)			Vegetation level <sup>‡</sup> (reference level: 0–25%)			Season <sup>‡</sup> (reference level: autumn)			Experimental group × period interaction (Reference level: Feeding, during period)		
				Experimental group (reference level: feeding)	Experimental period (reference level: during)	Background feeding <sup>‡</sup> (reference level: high)	Low	Medium	26–50%	51–75%	Spring	Summer	Winter	Nonfeeding, before period	Nonfeeding, after period
<b>Overall community structure responses</b>															
Overall species richness	N	0.314	-1.009***	0.005	0.473	-0.277	<b>0.886*</b>	0.700	<b>0.649**</b>	0.049	0.233	0.211	-0.101		
Native species richness	N	0.049	-1.05****	-0.033	-0.198	-0.336	0.157	-0.603*	0.553***	0.151	0.183	<b>0.663*</b>	0.087		
Introduced species richness	N	0.266	0.042	0.038	0.671	0.058	<b>0.728*</b>	1.303***	0.096	-0.102	0.051	-0.454*	-0.189		
Overall abundance	NB (6.47)	-0.436****	-0.647****	-0.400****	-0.177	-0.081	0.062	-0.059	0.078*	0.073*	0.063*	0.521****	<b>0.522****</b>		
<b>Individual responses: Introduced species</b>															
House sparrow	NB (1.84)	-0.887****	-1.123****	-0.839****	-0.847**	-0.100	0.006	-0.505**	<b>0.165*</b>	<b>0.161**</b>	<b>0.133*</b>	<b>0.857****</b>	<b>1.076****</b>		
Common myna	N	-0.231	0.535*	0.146	0.240	-0.019	-0.181	-1.704***	0.186	<b>0.793***</b>	0.016	0.541	0.208		
Eurasian blackbird	P	-0.038	-0.584****	0.098	-0.127	0.044	0.214*	0.085	0.109	-0.048	-0.045	0.283*	0.147		
Spotted dove	NB (1.12)	-1.278***	-1.386****	-1.239****	-0.303	-0.352	0.510	0.407	0.151	0.176	0.056	<b>1.888****</b>	<b>1.235****</b>		
European starling	NB (1.30)	0.381	-0.861**	0.244	-0.013	-0.291	-0.796**	-1.149***	0.041	-0.191	-0.012	<b>0.671*</b>	0.089		
Song thrush	NB (3.95)	0.472**	-0.666*	0.056	-0.267	-0.280*	0.195	0.021	<b>0.376*</b>	-0.069	0.002	-0.227	<b>-0.539*</b>		
Eastern rosella	NB (0.63)	0.064	0.380	0.396	0.299	-0.239	0.918	<b>1.085*</b>	0.186	0.223	0.219	-0.347	-0.066		
Chaffinch	NB (0.64)	0.223	-0.772	0.223	-0.072	-0.139	0.569	0.456	0.544	0.574	0.504	-1.475	0.006		
<b>Individual responses: Native species</b>															
Silveryeye	P	-0.223*	-0.163	-0.041	0.28	0.168	0.141	<b>0.492**</b>	-0.275**	-0.138	0.076	<b>0.158</b>	0.091		
Tūī	NB (1.58)	0.014	-0.067	0.149	-0.468	-0.573*	0.422	<b>1.258***</b>	0.088	-0.064	<b>0.176*</b>	-0.202	0.028		
Grey warbler	NB (1.34)	0.229	<b>0.839***</b>	-0.054	0.826	0.061	<b>0.95*</b>	<b>1.579***</b>	<b>0.534**</b>	0.216	0.211	<b>-0.851*</b>	-0.107		
New Zealand fantail	NB (1.02)	0.329	-0.766*	-0.399	0.071	-0.15	<b>1.037*</b>	<b>1.359***</b>	<b>-0.586*</b>	<b>-0.46*</b>	-0.091	-0.291	-0.499		

Figures presented are the parameter estimates. The interaction term (experimental group × experimental period) tests the key study question of whether the feeding regime has an effect on the given response variable. Parameter estimates highlighted in bold are significant, at: \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ , and \*\*\*\* $P < 0.0001$ . Species are listed by mean overall abundance (highest first).

<sup>†</sup>Error distribution used for model: N, normal, NB, negative binomial (dispersion parameter estimate given in parentheses), P, poison.

<sup>‡</sup>Included in the models as control variables.