

## Electronic Supplementary Material

### Testing congeneric niche overlap with an alternative taxonomy

#### Figure SM1

#### Tables S1-S4

(Handbook of the Birds of the World, Version 2.0, December 2017,

<http://datazone.birdlife.org/species/taxonomy>)

Note: The below outlines the results of all analyses using the alternative taxonomy above, with all methodologies for the analyses otherwise following those described in the main text.

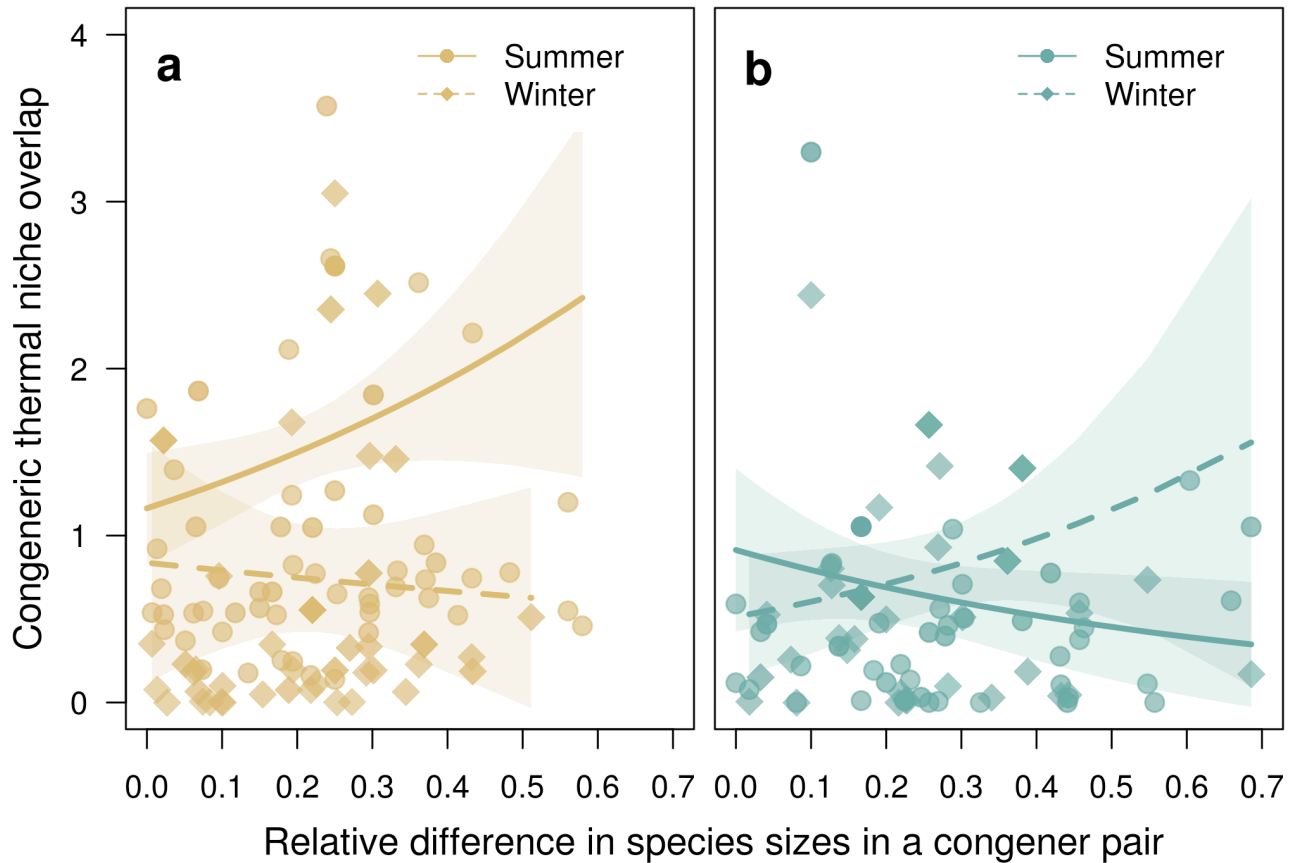
#### Biotic predictions: thermal niche overlap between congeners

Across seasons, congeneric thermal niches were more segregated in the highly speciose east than in the relatively species-poor west ( $\beta_{\text{region}} = 0.64$  [0.40, 0.90]; McFadden's Pseudo- $R^2 = 0.14$ ). With summer and winter congeneric niche overlap data pooled, thermal niche overlap was unrelated to body size similarity between congeneric species pairs in either the east or the west ( $\beta_{\text{east}} = 0.01$  [-1.48, 1.43];  $\beta_{\text{west}} = 0.86$  [-0.29, 2.01]; McFadden's Pseudo- $R^2 = 0.00$ ).

#### Abiotic-biotic interactions: seasonality and thermal niche overlap between congeners

Congeners in the relatively species-poor west segregated in thermal space more in winter than in summer ( $\beta = -0.72$  [-1.22, -0.28]; McFadden's Pseudo- $R^2$  global model = 0.24), but the degree of congeneric segregation was unrelated to body size similarity between congeners ( $\beta_{\text{summer}} = 1.27$  [-0.10, 2.62];  $\beta_{\text{winter}} = -0.57$  [-3.17, 2.07]; Fig. SM1a). In the highly speciose (but less seasonal) east, we found opposite patterns between congeneric overlap and body size similarity across seasons. While qualitatively similar in direction to the results from our main analyses (see paper), these relationships—with the alternative taxonomy—were somewhat weaker. Similarly-sized congeners were more likely to

segregate in thermal space in the winter in the east ( $\beta_{\text{winter}} = 1.62 [-0.22, 3.43]$ , 90% CI = [0.07, 3.14]; Fig. SM1b), while the relationship reversed in summer, with similarly-sized species in the east more likely to share thermal niche space ( $\beta_{\text{summer}} = -1.40 [-3.80, 0.75]$ , 80% CI = [-2.94, 0.00]; Fig. SM1b).



**Figure SM1.** Relationship between thermal niche overlap and relative size differences between congeneric species pairs of Himalayan birds ( $N = 177$  pairs; 38 genera). (a) In the west, thermal niche overlap between congeners was not related to differences in body size in either summer or in winter. (b) In the east, similarly sized congeners were more likely to segregate in thermal space in winter, but occupy similar thermal space in summer. Bold lines and shaded regions reflect predicted relationships from weighted quasipoisson regressions with 95% confidence intervals, respectively. The transparency of each point indicates its relative weight in the regression – bolder points contribute more towards model fit (see Methods in main text).

**Table S1. Species-specific thermal niche overlap between summer and winter, as calculated using the equation in Fig. 2a, with species traits used to predict thermal niche overlap (see Fig. 3).  $N_S$  and  $N_W$  represent summer and winter sample sizes, respectively.**

ID	Common Name	Scientific Name	Region	Thermal Niche Overlap	$N_S$	$N_W$	Body Mass (g)	Diet	Median Temp (°C)
1	Ashy Drongo	<i>Dicrurus leucophaeus</i>	East	0.193	61	35	37.60	I	16.11
2	Ashy Wood Pigeon	<i>Columba pulchricollis</i>	East	0.090	15	5	330.00	F	12.85
3	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	East	0.632	9	34	5.10	I	14.22
4	Bar-tailed Treecreeper	<i>Certhia himalayana</i>	West	0.084	123	70	8.80	I	13.53
5	Bar-throated Minla	<i>Minla strigula</i>	East	0.411	44	14	19.20	O	12.09
6	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	East	0.542	31	47	132.00	I	15.51
7	Beautiful Siberia	<i>Heterophasia pulchella</i>	East	0.440	215	214	41.00	O	14.12
8	Bhutan Laughingthrush	<i>Trochalopteron imbricatum</i>	East	0.000	9	8	40.70	O	15.34
9	Black-and-yellow Grosbeak	<i>Mycerobas icteroides</i>	West	0.287	84	75	67.00	G	12.53
10	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	East	0.021	8	29	9.50	O	15.85
11	Black-faced Laughingthrush	<i>Trochalopteron affine</i>	East	0.000	12	10	73.00	O	12.60
12	Black-faced Warbler	<i>Abroscopus schisticeps</i>	East	0.027	18	21	4.70	I	13.98
13	Black-lored Tit	<i>Maclolophus xanthogenys</i>	East	0.000	5	9	14.90	I	17.98
14	Black-throated Bushtit	<i>Aegithalos concinnus</i>	East	0.000	8	6	6.10	I	16.39
15	Black-throated Bushtit	<i>Aegithalos concinnus</i>	West	0.000	14	14	6.10	I	13.43
16	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	West	0.653	217	75	158.00	I	12.79
17	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	West	0.138	23	32	21.50	I	11.74
18	Blue-winged Minla	<i>Minla cyanoptera</i>	East	0.000	19	5	17.00	O	14.53
19	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	East	1.153	134	62	7.80	I	14.26
20	Brown Dipper	<i>Cinclus pallasii</i>	West	0.633	33	14	76.00	I	13.29
21	Brown-throated Fulvetta	<i>Fulvetta ludlowi</i>	East	0.000	12	9	10.50	I	11.68
22	Buff-barred Warbler	<i>Phylloscopus pulcher</i>	West	0.001	247	30	6.80	I	11.74
23	Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	East	0.400	107	105	71.70	O	12.49
24	Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	West	0.124	57	11	71.70	O	12.69
25	Chestnut-crowned Warbler	<i>Seicercus castaniceps</i>	East	0.128	8	9	5.30	I	14.90
27	Chestnut-headed Tesia	<i>Cettia castaneocoronata</i>	East	1.182	68	94	9.00	I	12.41
26	Chestnut-headed Tesia	<i>Cettia castaneocoronata</i>	West	0.069	75	29	9.00	I	13.61
28	Coal Tit	<i>Periparus ater</i>	West	0.530	410	217	9.20	I	13.08
29	Collared Grosbeak	<i>Mycerobas affinis</i>	West	0.283	29	23	83.00	G	11.02
30	Common Rosefinch	<i>Carpodacus erythrinus</i>	West	0.000	7	11	24.00	G	11.73
31	Fire-breasted Flowerpecker	<i>Dicaeum ignipectum</i>	East	0.282	15	71	5.90	O	15.45
32	Goldcrest	<i>Regulus regulus</i>	West	0.013	21	15	5.55	I	12.33
33	Golden Babbler	<i>Stachyridopsis chrysaeca</i>	East	0.000	41	29	9.00	I	17.15
34	Golden Bush Robin	<i>Tarsiger chrysaeus</i>	West	0.013	36	14	13.80	I	11.45
35	Golden-breasted Fulvetta	<i>Lioparus chrysolis</i>	East	0.000	5	8	5.50	I	13.71
36	Golden-throated Barbet	<i>Psilopogon franklinii</i>	East	0.139	75	23	63.50	F	15.93
38	Great Barbet	<i>Psilopogon virens</i>	East	0.585	135	115	202.00	F	14.72
37	Great Barbet	<i>Psilopogon virens</i>	West	0.138	54	24	202.00	F	14.02
39	Greater Yellownappe	<i>Chrysophlegma flavinucha</i>	East	0.000	7	9	181.50	I	17.16
40	Green-backed Tit	<i>Parus monticolus</i>	East	0.630	18	17	18.65	I	11.59
41	Green-backed Tit	<i>Parus monticolus</i>	West	0.070	94	47	18.65	I	13.27
42	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	East	1.464	184	190	6.90	O	12.42
43	Grey Crested Tit	<i>Lophopanes dichrous</i>	West	0.065	39	29	12.70	I	11.06
44	Grey Peacock-pheasant	<i>Polyplectron bicalcaratum</i>	East	0.000	24	6	605.00	O	16.34
45	Grey-bellied Tesia	<i>Tesia cyaniventer</i>	East	0.125	127	21	9.70	I	12.93
46	Grey-cheeked Warbler	<i>Seicercus poliogenys</i>	East	0.595	44	10	6.30	I	14.60
47	Grey-headed Canary-flycatcher	<i>Culicicapa ceylonensis</i>	East	0.093	118	6	7.70	I	15.45
48	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	West	0.288	26	7	7.25	I	12.73
49	Grey-sided Bush Warbler	<i>Cettia brunnifrons</i>	West	0.231	100	13	7.50	I	11.57

**Table S1. continued**

ID	Common Name	Scientific Name	Region	Thermal Niche Overlap	N <sub>s</sub>	N <sub>w</sub>	Body Mass (g)	Diet	Median Temp (°C)
50	Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	East	0.198	50	17	89.00	O	13.03
51	Grey-winged Blackbird	<i>Turdus boulboul</i>	East	0.000	5	5	97.10	O	14.42
52	Hill Partridge	<i>Arborophila torqueola</i>	East	0.892	125	53	345.50	O	14.12
53	Himalayan Bluetail	<i>Tarsiger rufilatus</i>	West	0.443	175	44	12.90	I	11.45
54	Himalayan Cutia	<i>Cutia nipalensis</i>	East	0.049	40	17	46.00	I	15.22
55	Himalayan Monal	<i>Lophophorus impejanus</i>	West	0.222	178	92	2090.00	O	11.54
56	Himalayan Woodpecker	<i>Dendrocopos himalayensis</i>	West	0.522	120	108	66.50	I	13.22
57	Hoary-throated Barwing	<i>Actinodura nipalensis</i>	East	0.044	20	26	43.50	O	14.59
58	Hodgson's Treecreeper	<i>Certhia hodgsoni</i>	West	0.456	84	45	9.00	I	11.18
59	Koklass Pheasant	<i>Pucrasia macrolopha</i>	West	0.077	71	58	1058.00	O	11.97
60	Large Niltava	<i>Niltava grandis</i>	East	0.330	24	28	30.30	I	15.51
61	Large-billed Crow	<i>Corvus macrorhynchos</i>	West	0.188	122	111	487.00	O	13.01
62	Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	West	1.531	431	52	5.10	I	12.50
63	Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	East	0.370	51	72	43.10	I	17.01
64	Long-tailed Minivet	<i>Pericrocotus ethologus</i>	West	0.271	100	17	19.00	O	13.00
65	Long-tailed Sibia	<i>Heterophasia picaoides</i>	East	0.323	30	31	42.40	O	16.59
66	Long-tailed Thrush	<i>Zoothera dixonii</i>	West	0.000	23	5	90.00	O	10.42
67	Maroon Oriole	<i>Oriolus traillii</i>	East	0.153	48	13	71.00	O	15.67
68	Mountain Bulbul	<i>Ixos maclellandii</i>	East	0.015	9	67	32.50	O	17.29
69	Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>	East	0.000	13	19	32.50	O	19.15
70	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	West	0.000	32	5	233.00	G	12.84
71	Pale Blue Flycatcher	<i>Cyornis unicolor</i>	East	0.000	55	8	21.00	I	17.01
72	Pink-browed Rosefinch	<i>Carpodacus rodochroa</i>	West	0.083	95	25	18.00	G	10.86
73	Plain Mountain Finch	<i>Leucosticte nemoricola</i>	West	0.086	9	70	22.70	G	7.95
74	Plumbeous Water Redstart	<i>Phoenicurus fuliginosus</i>	West	0.548	91	26	20.40	I	12.46
75	Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	West	0.004	8	16	268.00	O	8.11
76	Red-billed Leiothrix	<i>Leiothrix lutea</i>	East	0.353	61	60	21.40	O	11.59
77	Red-tailed Minla	<i>Minla ignotincta</i>	East	0.226	29	11	14.30	O	11.78
78	Rufous-backed Sibia	<i>Heterophasia annectans</i>	East	0.000	9	7	24.20	O	15.99
79	Rufous-bellied Niltava	<i>Niltava sundara</i>	West	0.115	39	9	21.10	I	13.86
80	Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	East	0.728	47	38	10.30	I	14.44
81	Rufous-gorgeted Flycatcher	<i>Ficedula strophiatea</i>	West	0.341	186	29	13.00	I	11.88
82	Rufous-naped Tit	<i>Periparus rufonuchalis</i>	West	0.019	22	61	13.05	I	10.94
83	Rufous-necked Hornbill	<i>Aceros nipalensis</i>	East	0.088	19	12	2385.00	F	16.54
84	Rufous-vented Tit	<i>Periparus rubidiventris</i>	West	0.233	84	28	11.80	I	11.81
85	Rufous-vented Yuhina	<i>Yuhina occipitalis</i>	East	0.407	25	76	13.00	O	11.53
86	Rufous-winged Fulvetta	<i>Alcippe castaneiceps</i>	East	0.240	29	9	12.50	I	12.79
87	Rusty-fronted Barwing	<i>Actinodura egertoni</i>	East	0.223	63	19	36.00	O	15.01
88	Scaly-bellied Woodpecker	<i>Picus squamatus</i>	West	0.000	16	9	170.00	I	13.91
89	Scaly-breasted Wren Babbler	<i>Pnoepyga albiventer</i>	West	0.313	89	40	20.90	I	11.27
90	Sikkim Treecreeper	<i>Certhia discolor</i>	East	0.429	18	9	10.40	I	12.50
91	Slaty-blue Flycatcher	<i>Ficedula tricolor</i>	West	0.015	52	8	8.30	I	11.94
92	Slender-billed Scimitar Babbler	<i>Pomatorhinus superciliaris</i>	East	0.385	59	55	28.00	I	13.01
93	Speckled Wood Pigeon	<i>Columba hodgsonii</i>	West	0.000	9	7	312.50	F	14.92
94	Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>	West	0.000	10	5	62.00	G	10.12
95	Spotted Elachura	<i>Elachura formosa</i>	East	0.000	5	5	12.70	I	15.85
96	Spotted Laughingthrush	<i>Garrulax ocellatus</i>	East	0.073	12	13	114.00	O	11.50
97	Spotted Nutcracker	<i>Nucifraga caryocatactes</i>	West	0.220	92	100	193.50	G	13.47
98	Streaked Laughingthrush	<i>Trochalopteron lineatum</i>	West	0.121	81	99	40.70	O	13.22
99	Streaked Spiderhunter	<i>Arachnothera magna</i>	East	0.492	34	52	30.70	O	16.36
100	Striated Bulbul	<i>Pycnonotus striatus</i>	East	0.291	73	74	52.50	O	15.05
101	Striated Laughingthrush	<i>Garrulax striatus</i>	East	0.335	111	158	92.00	O	15.02

**Table S1. continued**

ID	Common Name	Scientific Name	Region	Thermal Niche Overlap	N <sub>S</sub>	N <sub>W</sub>	Body Mass (g)	Diet	Median Temp (°C)
102	Striated Laughingthrush	<i>Garrulax striatus</i>	West	0.036	19	14	92.00	O	13.07
103	Stripe-throated Yuhina	<i>Yuhina gularis</i>	East	0.150	82	89	21.00	O	13.04
104	Sultan Tit	<i>Melanochlora sultanea</i>	East	0.000	13	17	37.60	I	17.61
105	Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	West	0.003	197	5	8.00	I	13.52
106	Variiegated Laughingthrush	<i>Garrulax variegatus</i>	West	0.154	178	52	64.50	O	11.81
107	Wedge-tailed Green Pigeon	<i>Treron sphenurus</i>	East	0.167	7	12	210.00	F	11.92
108	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	West	0.009	100	23	9.00	I	12.42
110	Whiskered Yuhina	<i>Yuhina flavicollis</i>	East	0.880	71	145	17.50	O	14.80
109	Whiskered Yuhina	<i>Yuhina flavicollis</i>	West	0.296	30	18	17.50	O	12.45
112	Whistler's Warbler	<i>Seicercus whistleri</i>	East	1.063	71	28	7.30	I	11.87
111	Whistler's Warbler	<i>Seicercus whistleri</i>	West	0.222	137	14	7.30	I	11.17
113	White-browed Fulvetta	<i>Fulvetta vinipectus</i>	West	0.000	5	7	12.00	I	11.72
114	White-browed Shortwing	<i>Brachypteryx montana</i>	East	0.051	12	5	17.60	I	12.04
115	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	West	0.049	8	20	30.50	I	11.30
116	White-cheeked Nuthatch	<i>Sitta leucopsis</i>	West	0.281	81	88	14.70	O	12.68
117	White-collared Blackbird	<i>Turdus albocinctus</i>	West	0.000	103	17	99.40	O	11.86
118	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	East	0.186	48	39	124.00	O	17.56
119	White-spectacled Warbler	<i>Seicercus affinis</i>	East	0.609	38	69	7.00	I	14.75
120	White-tailed Nuthatch	<i>Sitta himalayensis</i>	East	0.000	9	11	14.50	O	14.48
121	White-tailed Nuthatch	<i>Sitta himalayensis</i>	West	0.020	30	8	14.50	O	13.18
122	White-tailed Robin	<i>Myiomela leucura</i>	East	0.009	80	5	27.00	I	16.41
123	White-throated Bushtit	<i>Aegithalos niveogularis</i>	West	0.000	20	7	7.80	I	11.88
124	White-throated Fantail	<i>Rhipidura albicollis</i>	East	0.093	28	12	12.90	I	15.48
125	Yellow-bellied Fantail	<i>Chelidorhynch hypoxanthus</i>	East	1.163	20	63	5.50	I	12.42
126	Yellow-bellied Fantail	<i>Chelidorhynch hypoxanthus</i>	West	0.823	26	31	5.50	I	10.89
127	Yellow-breasted Greenfinch	<i>Chloris spinoides</i>	West	0.000	7	6	18.60	G	13.64
128	Yellow-browed Tit	<i>Sylviparus modestus</i>	East	0.203	6	11	7.25	I	14.60
129	Yellow-throated Fulvetta	<i>Alcippe cinerea</i>	East	0.006	20	19	10.00	I	15.25

**Table S2. Season-specific thermal niche overlap between pairs of congeneric species as calculated according to Fig. 2b.  $N_{\text{Species 1}}$  and  $N_{\text{Species 2}}$  are the number of observations of Species 1 and Species 2. See Table S1 for scientific names for species.**

Species 1 Common Name	Species 2 Common Name	Region	Season	Congeneric Overlap	$N_{\text{Species 1}}$	$N_{\text{Species 2}}$
Ashy Drongo	Lesser Racket-tailed Drongo	East	Winter	0.701	35	72
Ashy-throated Warbler	Blyth's Leaf Warbler	East	Winter	1.364	34	62
Ashy-throated Warbler	Greenish Warbler	West	Summer	0.698	52	49
Ashy-throated Warbler	Grey-hooded Warbler	West	Summer	0.540	52	26
Ashy-throated Warbler	Hume's Leaf Warbler	West	Summer	0.662	52	24
Ashy-throated Warbler	Large-billed Leaf Warbler	West	Summer	1.199	52	25
Ashy-throated Warbler	Western Crowned Warbler	West	Summer	2.213	52	100
Bar-tailed Treecreeper	Hodgson's Treecreeper	West	Winter	1.570	70	45
Bar-throated Minla	Blue-winged Minla	East	Winter	0.076	14	5
Bar-throated Minla	Red-tailed Minla	East	Winter	0.073	14	11
Beautiful Nuthatch	White-tailed Nuthatch	East	Summer	0.000	6	9
Beautiful Siberia	Long-tailed Siberia	East	Winter	0.151	214	31
Beautiful Siberia	Rufous-backed Siberia	East	Summer	0.089	215	9
Beautiful Siberia	Rufous-backed Siberia	East	Winter	0.075	214	7
Bhutan Laughingthrush	Black-faced Laughingthrush	East	Summer	0.027	9	12
Bhutan Laughingthrush	Black-faced Laughingthrush	East	Winter	0.045	8	10
Black-and-yellow Grosbeak	Collared Grosbeak	West	Summer	1.241	84	29
Black-and-yellow Grosbeak	Collared Grosbeak	West	Winter	1.680	75	23
Black-and-yellow Grosbeak	Spot-winged Grosbeak	West	Summer	0.548	84	10
Black-and-yellow Grosbeak	White-winged Grosbeak	West	Winter	0.004	75	8
Black-chinned Yuhina	Rufous-vented Yuhina	East	Summer	0.007	8	25
Black-eared Shrike-babbler	Blyth's Shrike-babbler	East	Summer	0.609	5	17
Black-throated Bushtit	White-throated Bushtit	West	Winter	0.075	14	7
Blue-fronted Redstart	Blue-capped Redstart	West	Winter	2.450	32	36
Blue-fronted Redstart	White-capped Redstart	West	Summer	0.628	23	8
Blue-winged Minla	Bar-throated Minla	East	Summer	0.515	19	44
Blyth's Leaf Warbler	Ashy-throated Warbler	East	Summer	0.343	134	9
Blyth's Leaf Warbler	Ashy-throated Warbler	West	Summer	1.634	123	52
Blyth's Leaf Warbler	Greenish Warbler	West	Summer	1.185	123	49
Blyth's Leaf Warbler	Grey-hooded Warbler	West	Summer	0.483	123	26
Blyth's Leaf Warbler	Hume's Leaf Warbler	West	Summer	0.596	123	24
Blyth's Leaf Warbler	Large-billed Leaf Warbler	West	Summer	0.610	123	25
Blyth's Leaf Warbler	Western Crowned Warbler	West	Summer	2.537	123	100
Brown Bullfinch	Grey-headed Bullfinch	East	Winter	0.013	9	6
Brown-flanked Bush Warbler	Aberrant Bush Warbler	West	Summer	0.252	54	48
Brown-flanked Bush Warbler	Yellow-bellied Bush Warbler	East	Summer	0.000	39	16
Buff-barred Warbler	Ashy-throated Warbler	West	Summer	1.269	247	52
Buff-barred Warbler	Blyth's Leaf Warbler	West	Summer	2.334	247	123
Buff-barred Warbler	Grey-hooded Warbler	West	Summer	0.535	247	26
Buff-barred Warbler	Hume's Leaf Warbler	West	Summer	0.537	247	24
Buff-barred Warbler	Large-billed Leaf Warbler	West	Summer	0.523	247	25
Buff-barred Warbler	Western Crowned Warbler	West	Summer	2.659	247	100
Buff-barred Warbler	Western Crowned Warbler	West	Winter	2.355	30	23
Chestnut-crowned Laughingthrush	Bhutan Laughingthrush	East	Summer	0.106	107	9
Chestnut-crowned Laughingthrush	Bhutan Laughingthrush	East	Winter	0.039	105	8
Chestnut-crowned Laughingthrush	Black-faced Laughingthrush	East	Summer	0.077	107	12
Chestnut-crowned Laughingthrush	Black-faced Laughingthrush	East	Winter	0.004	105	10
Chestnut-crowned Laughingthrush	Streaked Laughingthrush	West	Summer	0.745	57	81
Chestnut-crowned Laughingthrush	Streaked Laughingthrush	West	Winter	0.272	11	99
Chestnut-crowned Warbler	Grey-cheeked Warbler	East	Winter	0.298	9	10

**Table S2. continued**

Species 1 Common Name	Species 2 Common Name	Region	Season	Congeneric Overlap	N <sub>Species 1</sub>	N <sub>Species 2</sub>
Chestnut-crowned Warbler	Whistler's Warbler	East	Summer	0.303	8	71
Chestnut-crowned Warbler	White-spectacled Warbler	East	Winter	0.220	9	69
Chestnut-headed Tesia	Grey-sided Bush Warbler	West	Summer	0.662	75	100
Chestnut-headed Tesia	Grey-sided Bush Warbler	West	Winter	0.350	29	13
Coal Tit	Rufous-naped Tit	West	Summer	0.419	410	22
Coal Tit	Rufous-naped Tit	West	Winter	0.774	217	61
Coal Tit	Rufous-vented Tit	West	Summer	1.048	410	84
Coal Tit	Rufous-vented Tit	West	Winter	0.554	217	28
Collared Grosbeak	White-winged Grosbeak	West	Winter	0.001	23	8
Golden Babbler	Rufous-capped Babbler	East	Summer	0.822	41	47
Golden Babbler	Rufous-capped Babbler	East	Winter	0.803	29	38
Great Barbet	Golden-throated Barbet	East	Summer	1.052	135	75
Great Barbet	Golden-throated Barbet	East	Winter	0.170	115	23
Greater Necklaced Laughingthrush	White-crested Laughingthrush	East	Winter	0.314	11	39
Green-tailed Sunbird	Black-throated Sunbird	East	Summer	0.136	184	8
Greenish Warbler	Grey-hooded Warbler	West	Summer	0.544	49	26
Greenish Warbler	Hume's Leaf Warbler	West	Summer	0.496	49	24
Greenish Warbler	Large-billed Leaf Warbler	West	Summer	0.441	49	25
Greenish Warbler	Western Crowned Warbler	West	Summer	1.351	49	100
Grey-cheeked Warbler	Chestnut-crowned Warbler	East	Summer	0.197	44	8
Grey-cheeked Warbler	Whistler's Warbler	East	Summer	0.337	44	71
Grey-cheeked Warbler	White-spectacled Warbler	East	Winter	2.440	10	69
Grey-hooded Warbler	Buff-barred Warbler	West	Winter	0.181	7	30
Grey-hooded Warbler	Hume's Leaf Warbler	West	Summer	0.525	26	24
Grey-hooded Warbler	Large-billed Leaf Warbler	West	Summer	0.626	26	25
Grey-hooded Warbler	Lemon-rumped Warbler	West	Winter	1.478	7	52
Grey-hooded Warbler	Western Crowned Warbler	West	Winter	0.198	7	23
Grey-sided Laughingthrush	Greater Necklaced Laughingthrush	East	Winter	0.185	17	11
Grey-sided Laughingthrush	Spotted Laughingthrush	East	Summer	0.229	50	12
Grey-sided Laughingthrush	White-crested Laughingthrush	East	Winter	0.097	17	39
Hill Partridge	Chestnut-breasted Partridge	East	Summer	0.010	125	5
Himalayan Bluetail	Golden Bush Robin	West	Summer	1.052	175	36
Himalayan Bluetail	Golden Bush Robin	West	Winter	0.199	44	14
Hoary-throated Barwing	Rusty-fronted Barwing	East	Winter	0.400	26	19
Hodgson's Treecreeper	Bar-tailed Treecreeper	West	Summer	0.526	84	123
Hume's Leaf Warbler	Large-billed Leaf Warbler	West	Summer	0.778	24	25
Indian Cuckoo	Himalayan Cuckoo	East	Summer	0.192	67	26
Indian Cuckoo	Lesser Cuckoo	East	Summer	1.038	67	62
Large Hawk Cuckoo	Hodgson's Hawk Cuckoo	East	Summer	0.447	75	7
Large Niltava	Rufous-bellied Niltava	East	Summer	0.506	24	57
Large Niltava	Small Niltava	East	Summer	1.329	24	19
Lemon-rumped Warbler	Ashy-throated Warbler	West	Summer	1.761	431	52
Lemon-rumped Warbler	Blyth's Leaf Warbler	West	Summer	2.655	431	123
Lemon-rumped Warbler	Buff-barred Warbler	West	Summer	2.614	431	247
Lemon-rumped Warbler	Buff-barred Warbler	West	Winter	0.193	52	30
Lemon-rumped Warbler	Greenish Warbler	West	Summer	1.336	431	49
Lemon-rumped Warbler	Grey-hooded Warbler	West	Summer	0.590	431	26
Lemon-rumped Warbler	Hume's Leaf Warbler	West	Summer	0.566	431	24
Lemon-rumped Warbler	Large-billed Leaf Warbler	West	Summer	0.549	431	25
Lemon-rumped Warbler	Western Crowned Warbler	West	Summer	3.637	431	100
Lemon-rumped Warbler	Western Crowned Warbler	West	Winter	0.185	52	23
Lesser Cuckoo	Eurasian Cuckoo	West	Summer	0.459	40	13
Lesser Cuckoo	Himalayan Cuckoo	East	Summer	0.775	62	26

**Table S2. continued**

Species 1 Common Name	Species 2 Common Name	Region	Season	Congeneric Overlap	N <sub>Species 1</sub>	N <sub>Species 2</sub>
Lesser Racket-tailed Drongo	Ashy Drongo	East	Summer	0.833	51	61
Long-tailed Sibia	Beautiful Sibia	East	Summer	0.424	30	215
Long-tailed Sibia	Rufous-backed Sibia	East	Summer	0.148	30	9
Long-tailed Sibia	Rufous-backed Sibia	East	Winter	0.480	31	7
Long-tailed Thrush	Plain-backed Thrush	West	Winter	0.000	5	5
Long-tailed Thrush	Scaly Thrush	West	Summer	0.177	23	17
Mistle Thrush	Black-throated Thrush	West	Winter	0.063	11	12
Mistle Thrush	White-collared Blackbird	West	Winter	0.050	11	17
Pink-browed Rosefinch	Common Rosefinch	West	Summer	0.138	95	7
Pink-browed Rosefinch	Common Rosefinch	West	Winter	3.049	25	11
Plumbeous Water Redstart	Blue-capped Redstart	West	Winter	0.327	26	36
Plumbeous Water Redstart	Blue-fronted Redstart	West	Summer	0.369	91	23
Plumbeous Water Redstart	Blue-fronted Redstart	West	Winter	0.229	26	32
Plumbeous Water Redstart	White-capped Redstart	West	Summer	0.692	91	8
Plumbeous Water Redstart	White-capped Redstart	West	Winter	1.457	26	20
Red-headed Bullfinch	Brown Bullfinch	West	Summer	0.196	27	19
Red-headed Trogon	Ward's Trogon	East	Summer	0.000	15	5
Red-tailed Minla	Bar-throated Minla	East	Summer	0.815	29	44
Red-tailed Minla	Blue-winged Minla	East	Summer	0.530	29	19
Red-tailed Minla	Blue-winged Minla	East	Winter	0.000	11	5
Rosy Pipit	Olive-backed Pipit	West	Summer	3.573	103	56
Rufous-breasted Accentor	Altai Accentor	West	Winter	0.179	5	15
Rufous-gorgeted Flycatcher	Slaty-blue Flycatcher	West	Summer	2.515	186	52
Rufous-gorgeted Flycatcher	Slaty-blue Flycatcher	West	Winter	0.228	29	8
Rufous-naped Tit	Rufous-vented Tit	West	Summer	0.744	22	84
Rufous-naped Tit	Rufous-vented Tit	West	Winter	0.757	61	28
Rufous-throated Partridge	Chestnut-breasted Partridge	East	Summer	0.011	21	5
Rufous-throated Partridge	Hill Partridge	East	Summer	0.590	21	125
Rufous-vented Yuhina	Black-chinned Yuhina	East	Winter	0.930	76	29
Rufous-winged Fulvetta	Yellow-throated Fulvetta	East	Winter	0.496	9	19
Rusty-fronted Barwing	Hoary-throated Barwing	East	Summer	1.343	63	20
Scaly-bellied Woodpecker	Grey-headed Woodpecker	West	Summer	0.246	16	17
Scaly-breasted Wren Babbler	Nepal Wren Babbler	West	Summer	0.682	89	44
Silver-eared Mesia	Red-billed Leiothrix	East	Summer	0.032	82	61
Slaty-bellied Tesia	Grey-bellied Tesia	East	Summer	0.398	29	127
Slaty-blue Flycatcher	Rufous-gorgeted Flycatcher	East	Winter	0.849	68	73
Slender-billed Scimitar Babbler	Streak-breasted Scimitar Babbler	East	Summer	0.219	59	8
Small Niltava	Rufous-bellied Niltava	East	Summer	0.277	19	57
Speckled Wood Pigeon	Snow Pigeon	West	Winter	0.000	7	9
Spot-winged Grosbeak	Black-and-yellow Grosbeak	West	Winter	0.005	5	75
Spot-winged Grosbeak	Collared Grosbeak	West	Summer	0.650	10	29
Spot-winged Grosbeak	Collared Grosbeak	West	Winter	0.001	5	23
Spot-winged Grosbeak	White-winged Grosbeak	West	Winter	0.000	5	8
Spotted Laughingthrush	Greater Necklaced Laughingthrush	East	Winter	0.000	13	11
Spotted Laughingthrush	Grey-sided Laughingthrush	East	Winter	0.059	13	17
Spotted Laughingthrush	White-crested Laughingthrush	East	Winter	0.000	13	39
Striated Laughingthrush	Greater Necklaced Laughingthrush	East	Winter	0.093	158	11
Striated Laughingthrush	Grey-sided Laughingthrush	East	Summer	2.985	111	50
Striated Laughingthrush	Grey-sided Laughingthrush	East	Winter	1.043	158	17
Striated Laughingthrush	Spotted Laughingthrush	East	Summer	0.167	111	12
Striated Laughingthrush	Spotted Laughingthrush	East	Winter	0.102	158	13
Striated Laughingthrush	Variiegated Laughingthrush	West	Winter	0.000	14	52
Striated Laughingthrush	White-crested Laughingthrush	East	Summer	0.657	111	48



**Table S2. continued**

Species 1 Common Name	Species 2 Common Name	Region	Season	Congeneric Overlap	N <sub>Species 1</sub>	N <sub>Species 2</sub>
Striated Laughingthrush	White-crested Laughingthrush	East	Winter	0.136	158	39
Striated Laughingthrush	White-throated Laughingthrush	East	Winter	0.192	158	9
Stripe-throated Yuhina	Black-chinned Yuhina	East	Summer	0.112	82	8
Stripe-throated Yuhina	Black-chinned Yuhina	East	Winter	0.734	89	29
Stripe-throated Yuhina	Rufous-vented Yuhina	East	Summer	0.489	82	25
Stripe-throated Yuhina	Rufous-vented Yuhina	East	Winter	1.404	89	76
Stripe-throated Yuhina	White-naped Yuhina	East	Summer	0.011	82	5
Ultramarine Flycatcher	Rufous-gorgeted Flycatcher	West	Summer	0.837	197	186
Ultramarine Flycatcher	Rufous-gorgeted Flycatcher	West	Winter	0.009	5	29
Ultramarine Flycatcher	Slaty-blue Flycatcher	West	Summer	1.394	197	52
Ultramarine Flycatcher	Slaty-blue Flycatcher	West	Winter	0.034	5	8
Variiegated Laughingthrush	Striated Laughingthrush	West	Summer	0.386	178	19
Western Crowned Warbler	Grey-hooded Warbler	West	Summer	0.822	100	26
Western Crowned Warbler	Hume's Leaf Warbler	West	Summer	0.789	100	24
Western Crowned Warbler	Large-billed Leaf Warbler	West	Summer	0.772	100	25
Whiskered Yuhina	Black-chinned Yuhina	East	Summer	0.376	71	8
Whiskered Yuhina	Black-chinned Yuhina	East	Winter	0.536	145	29
Whiskered Yuhina	Rufous-vented Yuhina	East	Summer	0.420	71	25
Whiskered Yuhina	Rufous-vented Yuhina	East	Winter	1.662	145	76
Whiskered Yuhina	Stripe-throated Yuhina	East	Summer	1.053	71	82
Whiskered Yuhina	Stripe-throated Yuhina	East	Winter	0.633	145	89
Whiskered Yuhina	White-naped Yuhina	East	Summer	0.118	71	5
Whistler's Warbler	Chestnut-crowned Warbler	East	Winter	0.221	28	9
Whistler's Warbler	Grey-cheeked Warbler	East	Winter	0.385	28	10
Whistler's Warbler	White-spectacled Warbler	East	Winter	0.526	28	69
White-capped Redstart	Blue-capped Redstart	West	Winter	0.511	20	36
White-capped Redstart	Blue-fronted Redstart	West	Winter	0.335	20	32
White-cheeked Nuthatch	White-tailed Nuthatch	West	Summer	0.921	81	30
White-collared Blackbird	Black-throated Thrush	West	Winter	0.112	17	12
White-collared Blackbird	Grey-winged Blackbird	West	Summer	0.436	103	15
White-crested Laughingthrush	Grey-sided Laughingthrush	East	Summer	0.462	48	50
White-crested Laughingthrush	Spotted Laughingthrush	East	Summer	0.000	48	12
White-naped Yuhina	Black-chinned Yuhina	East	Summer	0.597	5	8
White-naped Yuhina	Rufous-vented Yuhina	East	Summer	0.000	5	25
White-spectacled Warbler	Chestnut-crowned Warbler	East	Summer	0.202	38	8
White-spectacled Warbler	Grey-cheeked Warbler	East	Summer	3.297	38	44
White-spectacled Warbler	Whistler's Warbler	East	Summer	0.470	38	71
White-tailed Nuthatch	White-cheeked Nuthatch	West	Winter	0.078	8	88
White-throated Bushtit	Black-throated Bushtit	West	Summer	0.162	20	14
White-throated Laughingthrush	Greater Necklaced Laughingthrush	East	Winter	0.031	9	11
White-throated Laughingthrush	Grey-sided Laughingthrush	East	Winter	0.258	9	17
White-throated Laughingthrush	Spotted Laughingthrush	East	Winter	0.379	9	13
White-throated Laughingthrush	White-crested Laughingthrush	East	Winter	0.014	9	39
Yellow-throated Fulvetta	Rufous-winged Fulvetta	East	Summer	0.120	20	29

**Table S3. Species excluded from analysis, sorted by region and exclusion reason.**

Eastern Himalayas excluded species		
Common Name	Scientific Name	Reason for exclusion
Bar-winged Wren-Babbler	<i>Spelaeornis troglodytoides</i>	Summer only
Blyth's Tragopan	<i>Tragopan blythii</i>	Summer only
Buff-barred Warbler	<i>Phylloscopus pulcher</i>	Summer only
Chestnut-breasted Partridge	<i>Arborophila mandellii</i>	Summer only
Collared Owlet	<i>Glaucidium brodiei</i>	Summer only
Common Green Magpie	<i>Cissa chinensis</i>	Summer only
Crested Serpent Eagle	<i>Splironis cheela</i>	Summer only
Crimson-breasted Woodpecker	<i>Dendrocopos cathpharius</i>	Summer only
Dark-sided Flycatcher	<i>Muscicapa sibirica</i>	Summer only
Eurasian Cuckoo	<i>Cuculus canorus</i>	Summer only
Eyebrowed Wren-Babbler	<i>Napothera epilepidota</i>	Summer only
Fulvous Parrotbill	<i>Suthora fulvifrons</i>	Summer only
Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	Summer only
Grey Bushchat	<i>Saxicola ferreus</i>	Summer only
Hair-crested Drongo	<i>Dicrurus hottentottus</i>	Summer only
Himalayan Cuckoo	<i>Cuculus saturatus</i>	Summer only
Hodgson's Hawk Cuckoo	<i>Hierococcyx nisicolor</i>	Summer only
Indian Blue Robin	<i>Larvivora brunnea</i>	Summer only
Indian Cuckoo	<i>Cuculus micropterus</i>	Summer only
Lesser Cuckoo	<i>Cuculus poliocephalus</i>	Summer only
Long-billed Wren-Babbler	<i>Rimator malacoptilus</i>	Summer only
Mountain Imperial Pigeon	<i>Ducula badia</i>	Summer only
Mrs Gould's Sunbird	<i>Aethopyga gouldiae</i>	Summer only
Orange-headed Thrush	<i>Geokichla citrina</i>	Summer only
Purple Cochoa	<i>Cochoa purpurea</i>	Summer only
Pygmy Flycatcher	<i>Muscicapella hodgsoni</i>	Summer only
Pygmy Wren Babbler	<i>Pnoepyga pusilla</i>	Summer only
Red-breasted Flycatcher	<i>Ficedula parva</i>	Summer only
Rufous-bellied Woodpecker	<i>Dendrocopos hyperythrus</i>	Summer only
Rufous-chinned Laughingthrush	<i>Garrulax rufogularis</i>	Summer only
Sapphire Flycatcher	<i>Ficedula sapphira</i>	Summer only
Scaly Thrush	<i>Zoothera dauma</i>	Summer only
Silver-eared Mesia	<i>Leiothrix argentauris</i>	Summer only
Slaty-bellied Tesia	<i>Tesia olivea</i>	Summer only
Snowy-browed flycatcher	<i>Ficedula hyperythra</i>	Summer only
Spot-bellied Eagle-Owl	<i>Bubo nipalensis</i>	Summer only
Temminck's Tragopan	<i>Tragopan temminckii</i>	Summer only
Verditer Flycatcher	<i>Eumyias thalassinus</i>	Summer only
White-capped Redstart	<i>Phoenicurus leucocephalus</i>	Summer only
Yellow-bellied Bush Warbler	<i>Horornis acanthizoides</i>	Summer only
Besra	<i>Accipiter virgatus</i>	Winter only
Black-headed Shrike-babbler	<i>Pteruthius rufiventer</i>	Winter only
Black Bulbul	<i>Hypsipetes leucocephalus</i>	Winter only
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	Winter only
Bronzed Drongo	<i>Dicrurus aeneus</i>	Winter only
Brown Bullfinch	<i>Pyrrhula nipalensis</i>	Winter only
Brown Parrotbill	<i>Chloronis unicolor</i>	Winter only
Bugun Liocichla	<i>Liocichla bugunorum</i>	Winter only
Coal Tit	<i>Periparus ater</i>	Winter only
Crested Kingfisher	<i>Megaceryle lugubris</i>	Winter only
Dark-breasted Rosefinch	<i>Procarduelis nipalensis</i>	Winter only
Grey-headed Bullfinch	<i>Pyrrhula erythaca</i>	Winter only
Himalayan Bluetail	<i>Tarsiger rufilatus</i>	Winter only

**Table S3. continued**

Eastern Himalayas excluded species		
Common Name	Scientific Name	Reason for exclusion
House Swift	<i>Apus nipalensis</i>	Winter only
Long-tailed Thrush	<i>Zoothera dixonii</i>	Winter only
Mountain Hawk-Eagle	<i>Nisaetus nipalensis</i>	Winter only
Plain-backed Thrush	<i>Zoothera mollissima</i>	Winter only
Plumbeous Water Redstart	<i>Phoenicurus fuliginosus</i>	Winter only
Rufous-breasted Bush Robin	<i>Tarsiger hyperythrus</i>	Winter only
Rufous-fronted Bush-tit	<i>Aegithalos iouschistos</i>	Winter only
Rufous-gorgeted Flycatcher	<i>Ficedula strophiiata</i>	Winter only
Scarlet Minivet	<i>Pericrocotus speciosus</i>	Winter only
Short-billed Minivet	<i>Pericrocotus brevirostris</i>	Winter only
Slaty-blue Flycatcher	<i>Ficedula tricolor</i>	Winter only
Spotted Forktail	<i>Enicurus maculatus</i>	Winter only
White-bellied Erpornis	<i>Erpornis zantholeuca</i>	Winter only
White-hooded Babbler	<i>Gampsorhynchus rufulus</i>	Winter only
White-throated Bulbul	<i>Alophoixus flaveolus</i>	Winter only
White-throated Laughingthrush	<i>Garrulax albogularis</i>	Winter only
Yellow-bellied Flowerpecker	<i>Dicaeum melanoxanthum</i>	Winter only
Yellow-breasted Greenfinch	<i>Chloris spinoides</i>	Winter only
Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>	Low sample in summer
Grey-chinned Minivat	<i>Pericrocotus solaris</i>	Low sample in summer
Grey Treepie	<i>Dendrocitta formosae</i>	Low sample in summer
Lesser Shortwing	<i>Brachypteryx leucophris</i>	Low sample in summer
Long-tailed Broadbill	<i>Psarisomus dalhousiae</i>	Low sample in summer
Olive-backed Pipit	<i>Anthus hodgsoni</i>	Low sample in summer
Red-faced Liocichla	<i>Liocichla phoenicea</i>	Low sample in summer
Spotted Nutcracker	<i>Nucifraga caryocatactes</i>	Low sample in summer
Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>	Low sample in summer
Barred Cuckoo-Dove	<i>Macropygia unchall</i>	Low sample in winter
Beautiful Nuthatch	<i>Sitta formosa</i>	Low sample in winter
Black-eared Shrike-babbler	<i>Pteruthius melanotis</i>	Low sample in winter
Black-throated Sunbird	<i>Aethopyga saturata</i>	Low sample in winter
Blue-fronted Robin	<i>Cinclidium frontale</i>	Low sample in winter
Blue-winged Laughingthrush	<i>Trochalopteron squamatum</i>	Low sample in winter
Brown-flanked Bush Warbler	<i>Horornis fortipes</i>	Low sample in winter
Grey-throated Babbler	<i>Stachyris nigriceps</i>	Low sample in winter
Large Hawk Cuckoo	<i>Hierococcyx sparveroides</i>	Low sample in winter
Lesser Shortwing	<i>Brachypteryx leucophris</i>	Low sample in winter
Long-tailed Minivet	<i>Pericrocotus ethologus</i>	Low sample in winter
Red-headed Trogon	<i>Harpactes erythrocephalus</i>	Low sample in winter
Rufous-bellied Niltava	<i>Niltava sundara</i>	Low sample in winter
Rufous-throated Partridge	<i>Arborophila rufogularis</i>	Low sample in winter
Rufous-throated Wren-Babbler	<i>Spelaornis caudatus</i>	Low sample in winter
Small Niltava	<i>Niltava macgrigoriae</i>	Low sample in winter
Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	Low sample in winter
Ward's Trogon	<i>Harpactes wardi</i>	Low sample in winter
White-gorgeted Flycatcher	<i>Anthipes monileger</i>	Low sample in winter
Black Eagle	<i>Ictinaetus malaiensis</i>	Low sample in summer and winter
Blue-throated Barbet	<i>Psilopogon asiaticus</i>	Low sample in summer and winter
Ferruginous Flycatcher	<i>Muscicapa ferruginea</i>	Low sample in summer and winter
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Low sample in summer and winter
Lesser Shortwing	<i>Brachypteryx leucophris</i>	Low sample in summer and winter
Red Junglefowl	<i>Gallus gallus</i>	Low sample in summer and winter

**Table S3. continued**

Western Himalayas excluded species		
Common Name	Scientific Name	Reason for exclusion
Aberrant Bush Warbler	<i>Horornis flavolivaceus</i>	Summer only
Ashy Drongo	<i>Dicrurus leucophaeus</i>	Summer only
Asian House Martin	<i>Delichon dasypus</i>	Summer only
Black Bulbul	<i>Hypsipetes leucocephalus</i>	Summer only
Brown-fronted Woodpecker	<i>Dendrocopos auriceps</i>	Summer only
Cheer Pheasant	<i>Catreus wallichii</i>	Summer only
Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	Summer only
Dark-sided Flycatcher	<i>Muscicapa sibirica</i>	Summer only
Eurasian Cuckoo	<i>Cuculus canorus</i>	Summer only
Eurasian Jay	<i>Garrulus glandarius</i>	Summer only
Eurasian Woodcock	<i>Scolopax rusticola</i>	Summer only
Fire-breasted Flowerpecker	<i>Dicaeum ignipectum</i>	Summer only
Green Shrike-babbler	<i>Pteruthius xanthochlorus</i>	Summer only
Grey-bellied Cuckoo	<i>Cacomantis passerinus</i>	Summer only
Grey-winged Blackbird	<i>Turdus boulboul</i>	Summer only
Grey Bush Chat	<i>Saxicola ferreus</i>	Summer only
Himalayan Cuckoo	<i>Cuculus saturatus</i>	Summer only
Himalayan Snowcock	<i>Tetraogallus himalayensis</i>	Summer only
Himalayan Swiftlet	<i>Aerodramus brevirostris</i>	Summer only
Himalayan White-browed Rosefinch	<i>Carpodacus thura</i>	Summer only
Indian Blue Robin	<i>Larvivora brunnea</i>	Summer only
Kalij Pheasant	<i>Lophura leucomelanos</i>	Summer only
Large Hawk Cuckoo	<i>Hierococcyx sparveroides</i>	Summer only
Lesser Cuckoo	<i>Cuculus poliocephalus</i>	Summer only
Long-billed Thrush	<i>Zoothera monticola</i>	Summer only
Mountain Scops Owl	<i>Otus spilocephalus</i>	Summer only
Mrs Gould's Sunbird	<i>Aethopyga gouldiae</i>	Summer only
Nepal Wren Babbler	<i>Pnoepyga immaculata</i>	Summer only
Pacific Swift	<i>Apus pacificus</i>	Summer only
Red-fronted Rosefinch	<i>Carpodacus puniceus</i>	Summer only
Rosy Pipit	<i>Anthus roseatus</i>	Summer only
Scaly Thrush	<i>Zoothera dauma</i>	Summer only
Slaty-headed Parakeet	<i>Psittacula himalayana</i>	Summer only
Spectacled Finch	<i>Callacanthis burtoni</i>	Summer only
Tickell's Leaf Warbler	<i>Phylloscopus affinis</i>	Summer only
Verditer Flycatcher	<i>Eumyias thalassinus</i>	Summer only
Wedge-tailed Green Pigeon	<i>Treron sphenurus</i>	Summer only
West Himalayan Bush Warbler	<i>Locustella kashmirensis</i>	Summer only
Western Tragopan	<i>Tragopan melanocephalus</i>	Summer only
Alpine Accentor	<i>Prunella collaris</i>	Winter only
Alpine Swift	<i>Tachymarptis melba</i>	Winter only
Altai Accentor	<i>Prunella himalayana</i>	Winter only
Bearded Vulture	<i>Gypaetus barbatus</i>	Winter only
Black-lored Tit	<i>Maclolophus xanthogenys</i>	Winter only
Black-throated Accentor	<i>Prunella atrogularis</i>	Winter only
Black-throated Thrush	<i>Turdus atrogularis</i>	Winter only
Black Eagle	<i>Ictinaetus malaiensis</i>	Winter only
Blue-capped Redstart	<i>Phoenicurus caeruleocephala</i>	Winter only
Blyth's Shrike-babbler	<i>Pteruthius aeralatus</i>	Winter only
Chestnut Thrush	<i>Turdus rubrocanus</i>	Winter only
Eurasian Eagle-Owl	<i>Bubo bubo</i>	Winter only
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	Winter only
Eurasian Wren	<i>Troglodytes troglodytes</i>	Winter only

**Table S3. continued**

Western Himalayas excluded species		
Common Name	Scientific Name	Reason for exclusion
Eurasian Wryneck	<i>Jynx torquilla</i>	Winter only
European Goldfinch	<i>Carduelis carduelis</i>	Winter only
Fire-capped Tit	<i>Cephalopyrus flammiceps</i>	Winter only
Golden Eagle	<i>Aquila chrysaetos</i>	Winter only
Hen Harrier	<i>Circus cyaneus</i>	Winter only
Himalayan Vulture	<i>Gyps himalayensis</i>	Winter only
Northern Goshawk	<i>Accipiter gentilis</i>	Winter only
Rufous-breasted Accentor	<i>Prunella strophciata</i>	Winter only
Spotted Forktail	<i>Enicurus maculatus</i>	Winter only
Tree Pipit	<i>Anthus trivialis</i>	Winter only
Upland Pipit	<i>Anthus sylvanus</i>	Winter only
Little Forktail	<i>Enicurus scouleri</i>	Low sample in summer
Mistle Thrush	<i>Turdus viscivorus</i>	Low sample in summer
Plain-backed Thrush	<i>Zoothera mollissima</i>	Low sample in summer
Rock Bunting	<i>Emberiza cia</i>	Low sample in summer
White-winged Grosbeak	<i>Mycerobas carnipes</i>	Low sample in summer
Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	Low sample in winter
Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	Low sample in winter
Brown-flanked Bush Warbler	<i>Horornis fortipes</i>	Low sample in winter
Common Kestrel	<i>Falco tinnunculus</i>	Low sample in winter
Dark-breasted Rosefinch	<i>Procarduelis nipalensis</i>	Low sample in winter
Grey-headed Canary-flycatcher	<i>Culicicapa ceylonensis</i>	Low sample in winter
Grey-headed Woodpecker	<i>Picus canus</i>	Low sample in winter
Hill Partridge	<i>Arborophila torqueola</i>	Low sample in winter
Hume's Leaf Warbler	<i>Phylloscopus humei</i>	Low sample in winter
Olive-backed Pipit	<i>Anthus hodgsoni</i>	Low sample in winter
Red-headed Bullfinch	<i>Pyrrhula erythrocephala</i>	Low sample in winter
Rufous Sibia	<i>Heterophasia capistrata</i>	Low sample in winter
Solitary Snipe	<i>Gallinago solitaria</i>	Low sample in winter
Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>	Low sample in winter
Eurasian Hobby	<i>Falco subbuteo</i>	Low sample in summer and winter
Himalayan Buzzard	<i>Buteo burmanicus</i>	Low sample in summer and winter
Himalayan Owl	<i>Strix niviculum</i>	Low sample in summer and winter
Yellow-browed Tit	<i>Sylviparus modestus</i>	Low sample in summer and winter

**Table S4. Season-specific thermal niche overlap between pairs of congeneric species using HBW taxonomy.**

Species 1 Common Name	Species 1 Scientific Name	Species 2 Common Name	Species 2 Scientific Name	Region	Season	Congeneric Overlap	N <sub>Species 1</sub>	N <sub>Species 2</sub>
Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	Black-throated Sunbird	<i>Aethopyga saturata</i>	East	Summer	0.136	184	8
Golden Babbler	<i>Cyanoderma chrysaea</i>	Rufous-capped Babbler	<i>Cyanoderma ruficeps</i>	East	Summer	0.822	41	47
Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	Ashy Drongo	<i>Dicrurus leucophaeus</i>	East	Summer	0.833	51	61
Red-headed Trogon	<i>Harpactes erythrocephalus</i>	Ward's Trogon	<i>Harpactes wardi</i>	East	Summer	0.000	15	5
Long-tailed Sibia	<i>Heterophasia picaoides</i>	Beautiful Sibia	<i>Heterophasia pulchella</i>	East	Summer	0.424	30	215
Large Hawk Cuckoo	<i>Hierococcyx sparveroides</i>	Hodgson's Hawk Cuckoo	<i>Hierococcyx nicolor</i>	East	Summer	0.447	75	7
Brown-flanked Bush Warbler	<i>Horornis fortipes</i>	Yellow-bellied Bush Warbler	<i>Horornis acanthizoides</i>	East	Summer	0.000	39	16
Silver-eared Mesia	<i>Leiothrix argenteauris</i>	Red-billed Leiothrix	<i>Leiothrix lutea</i>	East	Summer	0.032	82	61
Slender-billed Scimitar Babbler	<i>Pomatorhinus superciliaris</i>	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	East	Summer	0.219	59	8
Great Barbet	<i>Psilopogon virens</i>	Golden-throated Barbet	<i>Psilopogon franklinii</i>	East	Summer	1.052	135	75
Black-eared Shrike-babbler	<i>Pteruthius melanotis</i>	Blyth's Shrike-babbler	<i>Pteruthius aeralatus</i>	East	Summer	0.609	5	17
Yellow-throated Fulvetta	<i>Schoeniparus cinerea</i>	Rufous-winged Fulvetta	<i>Schoeniparus castaneiceps</i>	East	Summer	0.120	20	29
Beautiful Nuthatch	<i>Sitta formosa</i>	White-tailed Nuthatch	<i>Sitta himalayensis</i>	East	Summer	0.000	6	9
Slaty-bellied Tesia	<i>Tesia olivea</i>	Grey-bellied Tesia	<i>Tesia cyaniventer</i>	East	Summer	0.398	29	127
Rufous-throated Partridge	<i>Arborophila rufogularis</i>	Hill Partridge	<i>Arborophila torqueola</i>	East	Summer	0.590	21	125
Rufous-throated Partridge	<i>Arborophila rufogularis</i>	Chestnut-breasted Partridge	<i>Arborophila mandellii</i>	East	Summer	0.011	21	5
Hill Partridge	<i>Arborophila torqueola</i>	Chestnut-breasted Partridge	<i>Arborophila mandellii</i>	East	Summer	0.010	125	5
Indian Cuckoo	<i>Cuculus micropterus</i>	Lesser Cuckoo	<i>Cuculus poliocephalus</i>	East	Summer	1.038	67	62
Indian Cuckoo	<i>Cuculus micropterus</i>	Himalayan Cuckoo	<i>Cuculus saturatus</i>	East	Summer	0.192	67	26
Lesser Cuckoo	<i>Cuculus poliocephalus</i>	Himalayan Cuckoo	<i>Cuculus saturatus</i>	East	Summer	0.775	62	26
White-crested Laughingthrush	<i>Garrulax leucolophus</i>	Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	East	Summer	0.462	48	50
White-crested Laughingthrush	<i>Garrulax leucolophus</i>	Spotted Laughingthrush	<i>Garrulax ocellatus</i>	East	Summer	0.000	48	12
Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	Spotted Laughingthrush	<i>Garrulax ocellatus</i>	East	Summer	0.229	50	12
Large Niltava	<i>Niltava grandis</i>	Small Niltava	<i>Niltava macgrigoriae</i>	East	Summer	1.329	24	19
Large Niltava	<i>Niltava grandis</i>	Rufous-bellied Niltava	<i>Niltava sundara</i>	East	Summer	0.506	24	57
Small Niltava	<i>Niltava macgrigoriae</i>	Rufous-bellied Niltava	<i>Niltava sundara</i>	East	Summer	0.277	19	57
Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	Bhutan Laughingthrush	<i>Trochalopteron imbricatum</i>	East	Summer	0.106	107	9
Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	Black-faced Laughingthrush	<i>Trochalopteron affine</i>	East	Summer	0.077	107	12
Bhutan Laughingthrush	<i>Trochalopteron imbricatum</i>	Black-faced Laughingthrush	<i>Trochalopteron affine</i>	East	Summer	0.027	9	12
White-spectacled Warbler	<i>Phylloscopus affinis</i>	Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	East	Summer	3.297	38	44
White-spectacled Warbler	<i>Phylloscopus affinis</i>	Whistler's Warbler	<i>Phylloscopus whistleri</i>	East	Summer	0.470	38	71
White-spectacled Warbler	<i>Phylloscopus affinis</i>	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	East	Summer	0.562	38	9
Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	Whistler's Warbler	<i>Phylloscopus whistleri</i>	East	Summer	0.337	44	71
Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	East	Summer	0.475	44	9
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	East	Summer	0.708	71	9
Whiskered Yuhina	<i>Yuhina flavicollis</i>	Stripe-throated Yuhina	<i>Yuhina gularis</i>	East	Summer	1.053	71	82
Whiskered Yuhina	<i>Yuhina flavicollis</i>	White-naped Yuhina	<i>Yuhina bakeri</i>	East	Summer	0.118	71	5
Whiskered Yuhina	<i>Yuhina flavicollis</i>	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	East	Summer	0.376	71	8

**Table S4. continued**

Species 1 Common Name	Species 1 Scientific Name	Species 2 Common Name	Species 2 Scientific Name	Region	Season	Congeneric Overlap	N <sub>Species 1</sub>	N <sub>Species 2</sub>
Whiskered Yuhina	<i>Yuhina flavicollis</i>	Rufous-vented Yuhina	<i>Yuhina occipitalis</i>	East	Summer	0.420	71	25
Stripe-throated Yuhina	<i>Yuhina gularis</i>	White-naped Yuhina	<i>Yuhina bakeri</i>	East	Summer	0.011	82	5
Stripe-throated Yuhina	<i>Yuhina gularis</i>	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	East	Summer	0.112	82	8
Stripe-throated Yuhina	<i>Yuhina gularis</i>	Rufous-vented Yuhina	<i>Yuhina occipitalis</i>	East	Summer	0.489	82	25
White-naped Yuhina	<i>Yuhina bakeri</i>	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	East	Summer	0.597	5	8
White-naped Yuhina	<i>Yuhina bakeri</i>	Rufous-vented Yuhina	<i>Yuhina occipitalis</i>	East	Summer	0.000	5	25
Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	Rufous-vented Yuhina	<i>Yuhina occipitalis</i>	East	Summer	0.007	8	25
Golden Babbler	<i>Cyanoderma chrysaea</i>	Rufous-capped Babbler	<i>Cyanoderma ruficeps</i>	East	Winter	0.803	29	38
Ashy Drongo	<i>Dicrurus leucophaeus</i>	Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	East	Winter	0.701	35	72
Slaty-blue Flycatcher	<i>Ficedula tricolor</i>	Rufous-gorgeted Flycatcher	<i>Ficedula strophciata</i>	East	Winter	0.849	68	73
Beautiful Sibia	<i>Heterophasia pulchella</i>	Long-tailed Sibia	<i>Heterophasia picaoides</i>	East	Winter	0.151	214	31
Great Barbet	<i>Psilopogon virens</i>	Golden-throated Barbet	<i>Psilopogon franklinii</i>	East	Winter	0.170	115	23
Brown Bullfinch	<i>Pyrrhula nipalensis</i>	Grey-headed Bullfinch	<i>Pyrrhula erythaca</i>	East	Winter	0.013	9	6
Rufous-winged Fulvetta	<i>Schoeniparus castaneiceps</i>	Yellow-throated Fulvetta	<i>Schoeniparus cinerea</i>	East	Winter	0.496	9	19
Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	Bhutan Laughingthrush	<i>Trochalopteron imbricatum</i>	East	Winter	0.039	105	8
Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	Black-faced Laughingthrush	<i>Trochalopteron affine</i>	East	Winter	0.004	105	10
Bhutan Laughingthrush	<i>Trochalopteron imbricatum</i>	Black-faced Laughingthrush	<i>Trochalopteron affine</i>	East	Winter	0.045	8	10
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	East	Winter	0.511	28	34
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	East	Winter	0.385	28	10
Whistler's Warbler	<i>Phylloscopus whistleri</i>	White-spectacled Warbler	<i>Phylloscopus affinis</i>	East	Winter	0.526	28	69
Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	East	Winter	1.169	34	10
Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	White-spectacled Warbler	<i>Phylloscopus affinis</i>	East	Winter	1.417	34	69
Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	White-spectacled Warbler	<i>Phylloscopus affinis</i>	East	Winter	2.440	10	69
Whiskered Yuhina	<i>Yuhina flavicollis</i>	Stripe-throated Yuhina	<i>Yuhina gularis</i>	East	Winter	0.633	145	89
Whiskered Yuhina	<i>Yuhina flavicollis</i>	Rufous-vented Yuhina	<i>Yuhina occipitalis</i>	East	Winter	1.662	145	76
Whiskered Yuhina	<i>Yuhina flavicollis</i>	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	East	Winter	0.536	145	29
Stripe-throated Yuhina	<i>Yuhina gularis</i>	Rufous-vented Yuhina	<i>Yuhina occipitalis</i>	East	Winter	1.404	89	76
Stripe-throated Yuhina	<i>Yuhina gularis</i>	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	East	Winter	0.734	89	29
Rufous-vented Yuhina	<i>Yuhina occipitalis</i>	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	East	Winter	0.930	76	29
White-throated Laughingthrush	<i>Garrulax albogularis</i>	Spotted Laughingthrush	<i>Garrulax ocellatus</i>	East	Winter	0.379	9	13
White-throated Laughingthrush	<i>Garrulax albogularis</i>	Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	East	Winter	0.258	9	17
White-throated Laughingthrush	<i>Garrulax albogularis</i>	Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>	East	Winter	0.031	9	11
White-throated Laughingthrush	<i>Garrulax albogularis</i>	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	East	Winter	0.014	9	39
Spotted Laughingthrush	<i>Garrulax ocellatus</i>	Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	East	Winter	0.059	13	17
Spotted Laughingthrush	<i>Garrulax ocellatus</i>	Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>	East	Winter	0.000	13	11
Spotted Laughingthrush	<i>Garrulax ocellatus</i>	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	East	Winter	0.000	13	39
Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>	East	Winter	0.185	17	11
Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	East	Winter	0.097	17	39

**Table S4. continued**

Species 1 Common Name	Species 1 Scientific Name	Species 2 Common Name	Species 2 Scientific Name	Region	Season	Congeneric Overlap	N <sub>Species 1</sub>	N <sub>Species 2</sub>
Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	East	Winter	0.314	11	39
White-throated Bushtit	<i>Aegithalos niveogularis</i>	Black-throated Bushtit	<i>Aegithalos concinnus</i>	West	Summer	0.162	20	14
Rosy Pipit	<i>Anthus roseatus</i>	Olive-backed Pipit	<i>Anthus hodgsoni</i>	West	Summer	3.573	103	56
Pink-browed Rosefinch	<i>Carpodacus rodochroa</i>	Common Rosefinch	<i>Carpodacus erythrinus</i>	West	Summer	0.138	95	7
Hodgson's Treecreeper	<i>Certhia hodgsoni</i>	Bar-tailed Treecreeper	<i>Certhia himalayana</i>	West	Summer	0.526	84	123
Chestnut-headed Tesia	<i>Cettia castaneocoronata</i>	Grey-sided Bush Warbler	<i>Cettia brunnifrons</i>	West	Summer	0.662	75	100
Lesser Cuckoo	<i>Cuculus poliocephalus</i>	Eurasian Cuckoo	<i>Cuculus canorus</i>	West	Summer	0.459	40	13
Brown-flanked Bush Warbler	<i>Horornis fortipes</i>	Aberrant Bush Warbler	<i>Horornis flavolivaceus</i>	West	Summer	0.252	54	48
Scaly-bellied Woodpecker	<i>Picus squamatus</i>	Grey-headed Woodpecker	<i>Picus canus</i>	West	Summer	0.246	16	17
Scaly-breasted Wren Babbler	<i>Pnoepyga albiventer</i>	Nepal Wren Babbler	<i>Pnoepyga immaculata</i>	West	Summer	0.682	89	44
Red-headed Bullfinch	<i>Pyrrhula erythrocephala</i>	Brown Bullfinch	<i>Pyrrhula nipalensis</i>	West	Summer	0.196	27	19
White-cheeked Nuthatch	<i>Sitta leucopsis</i>	White-tailed Nuthatch	<i>Sitta himalayensis</i>	West	Summer	0.921	81	30
Himalayan Bluetail	<i>Tarsiger rufilatus</i>	Golden Bush Robin	<i>Tarsiger chrysaeus</i>	West	Summer	1.052	175	36
White-collared Blackbird	<i>Turdus albocinctus</i>	Grey-winged Blackbird	<i>Turdus boulboul</i>	West	Summer	0.436	103	15
Long-tailed Thrush	<i>Zoothera dixonii</i>	Scaly Thrush	<i>Zoothera dauma</i>	West	Summer	0.177	23	17
Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	Rufous-gorgeted Flycatcher	<i>Ficedula strophiate</i>	West	Summer	0.837	197	186
Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	Slaty-blue Flycatcher	<i>Ficedula tricolor</i>	West	Summer	1.394	197	52
Rufous-gorgeted Flycatcher	<i>Ficedula strophiate</i>	Slaty-blue Flycatcher	<i>Ficedula tricolor</i>	West	Summer	2.515	186	52
Black-and-yellow Grosbeak	<i>Mycerobas icterioides</i>	Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>	West	Summer	0.548	84	10
Black-and-yellow Grosbeak	<i>Mycerobas icterioides</i>	Collared Grosbeak	<i>Mycerobas affinis</i>	West	Summer	1.241	84	29
Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>	Collared Grosbeak	<i>Mycerobas affinis</i>	West	Summer	0.650	10	29
Coal Tit	<i>Periparus ater</i>	Rufous-naped Tit	<i>Periparus rufonuchalis</i>	West	Summer	0.419	410	22
Coal Tit	<i>Periparus ater</i>	Rufous-vented Tit	<i>Periparus rubidiventris</i>	West	Summer	1.048	410	84
Rufous-naped Tit	<i>Periparus rufonuchalis</i>	Rufous-vented Tit	<i>Periparus rubidiventris</i>	West	Summer	0.744	22	84
Plumbeous Water Redstart	<i>Phoenicurus fuliginosus</i>	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	West	Summer	0.369	91	23
Plumbeous Water Redstart	<i>Phoenicurus fuliginosus</i>	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	West	Summer	0.692	91	8
Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	West	Summer	0.628	23	8
Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	Variiegated Laughingthrush	<i>Trochalopteron variegatus</i>	West	Summer	0.423	57	178
Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	Streaked Laughingthrush	<i>Trochalopteron lineatum</i>	West	Summer	0.745	57	81
Variiegated Laughingthrush	<i>Trochalopteron variegatus</i>	Streaked Laughingthrush	<i>Trochalopteron lineatum</i>	West	Summer	0.944	178	81
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Whistler's Warbler	<i>Phylloscopus whistleri</i>	West	Summer	1.843	431	137
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Buff-barred Warbler	<i>Phylloscopus pulcher</i>	West	Summer	2.614	431	247
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	West	Summer	1.761	431	52
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	West	Summer	3.637	431	100
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	West	Summer	0.590	431	26
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Hume's Leaf Warbler	<i>Phylloscopus humei</i>	West	Summer	0.566	431	24
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	West	Summer	0.549	431	25
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Buff-barred Warbler	<i>Phylloscopus pulcher</i>	West	Summer	1.866	137	247



**Table S4. continued**

Species 1 Common Name	Species 1 Scientific Name	Species 2 Common Name	Species 2 Scientific Name	Region	Season	Congeneric Overlap	N <sub>Species 1</sub>	N <sub>Species 2</sub>
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	West	Summer	1.124	137	52
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	West	Summer	2.114	137	100
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	West	Summer	0.538	137	26
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Hume's Leaf Warbler	<i>Phylloscopus humei</i>	West	Summer	1.051	137	24
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	West	Summer	0.736	137	25
Buff-barred Warbler	<i>Phylloscopus pulcher</i>	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	West	Summer	1.269	247	52
Buff-barred Warbler	<i>Phylloscopus pulcher</i>	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	West	Summer	2.659	247	100
Buff-barred Warbler	<i>Phylloscopus pulcher</i>	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	West	Summer	0.535	247	26
Buff-barred Warbler	<i>Phylloscopus pulcher</i>	Hume's Leaf Warbler	<i>Phylloscopus humei</i>	West	Summer	0.537	247	24
Buff-barred Warbler	<i>Phylloscopus pulcher</i>	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	West	Summer	0.523	247	25
Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	West	Summer	2.213	52	100
Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	West	Summer	0.540	52	26
Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	Hume's Leaf Warbler	<i>Phylloscopus humei</i>	West	Summer	0.662	52	24
Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	West	Summer	1.199	52	25
Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	West	Summer	0.822	100	26
Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	Hume's Leaf Warbler	<i>Phylloscopus humei</i>	West	Summer	0.789	100	24
Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	West	Summer	0.772	100	25
Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	Hume's Leaf Warbler	<i>Phylloscopus humei</i>	West	Summer	0.525	26	24
Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	West	Summer	0.626	26	25
Hume's Leaf Warbler	<i>Phylloscopus humei</i>	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	West	Summer	0.778	24	25
Black-throated Bushtit	<i>Aegithalos concinnus</i>	White-throated Bushtit	<i>Aegithalos niveogularis</i>	West	Winter	0.075	14	7
Pink-browed Rosefinch	<i>Carpodacus rodochroa</i>	Common Rosefinch	<i>Carpodacus erythrinus</i>	West	Winter	3.049	25	11
Bar-tailed Treecreeper	<i>Certhia himalayana</i>	Hodgson's Treecreeper	<i>Certhia hodgsoni</i>	West	Winter	1.570	70	45
Chestnut-headed Tesia	<i>Cettia castaneocoronata</i>	Grey-sided Bush Warbler	<i>Cettia brunnifrons</i>	West	Winter	0.350	29	13
Speckled Wood Pigeon	<i>Columba hodgsonii</i>	Snow Pigeon	<i>Columba leuconota</i>	West	Winter	0.000	7	9
Rufous-breasted Accentor	<i>Prunella strophciata</i>	Altai Accentor	<i>Prunella himalayana</i>	West	Winter	0.179	5	15
White-tailed Nuthatch	<i>Sitta himalayensis</i>	White-cheeked Nuthatch	<i>Sitta leucopsis</i>	West	Winter	0.078	8	88
Himalayan Bluetail	<i>Tarsiger rufilatus</i>	Golden Bush Robin	<i>Tarsiger chrysaesus</i>	West	Winter	0.199	44	14
Long-tailed Thrush	<i>Zoothera dixonii</i>	Plain-backed Thrush	<i>Zoothera mollissima</i>	West	Winter	0.000	5	5
Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	Rufous-gorgeted Flycatcher	<i>Ficedula strophciata</i>	West	Winter	0.009	5	29
Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	Slaty-blue Flycatcher	<i>Ficedula tricolor</i>	West	Winter	0.034	5	8
Rufous-gorgeted Flycatcher	<i>Ficedula strophciata</i>	Slaty-blue Flycatcher	<i>Ficedula tricolor</i>	West	Winter	0.228	29	8
Coal Tit	<i>Periparus ater</i>	Rufous-naped Tit	<i>Periparus rufonuchalis</i>	West	Winter	0.774	217	61
Coal Tit	<i>Periparus ater</i>	Rufous-vented Tit	<i>Periparus rubidiventris</i>	West	Winter	0.554	217	28
Rufous-naped Tit	<i>Periparus rufonuchalis</i>	Rufous-vented Tit	<i>Periparus rubidiventris</i>	West	Winter	0.757	61	28
Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	Variiegated Laughingthrush	<i>Trochalopteron variegatus</i>	West	Winter	0.099	11	52
Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	Streaked Laughingthrush	<i>Trochalopteron lineatum</i>	West	Winter	0.272	11	99
Variiegated Laughingthrush	<i>Trochalopteron variegatus</i>	Streaked Laughingthrush	<i>Trochalopteron lineatum</i>	West	Winter	0.347	52	99

**Table S4. continued**

Species 1 Common Name	Species 1 Scientific Name	Species 2 Common Name	Species 2 Scientific Name	Region	Season	Congeneric Overlap	N <sub>Species 1</sub>	N <sub>Species 2</sub>
Mistle Thrush	<i>Turdus viscivorus</i>	White-collared Blackbird	<i>Turdus albocinctus</i>	West	Winter	0.050	11	17
Mistle Thrush	<i>Turdus viscivorus</i>	Black-throated Thrush	<i>Turdus atrogularis</i>	West	Winter	0.063	11	12
White-collared Blackbird	<i>Turdus albocinctus</i>	Black-throated Thrush	<i>Turdus atrogularis</i>	West	Winter	0.112	17	12
Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>	Black-and-yellow Grosbeak	<i>Mycerobas icteriodes</i>	West	Winter	0.005	5	75
Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>	Collared Grosbeak	<i>Mycerobas affinis</i>	West	Winter	0.001	5	23
Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>	White-winged Grosbeak	<i>Mycerobas carnipes</i>	West	Winter	0.000	5	8
Black-and-yellow Grosbeak	<i>Mycerobas icteriodes</i>	Collared Grosbeak	<i>Mycerobas affinis</i>	West	Winter	1.680	75	23
Black-and-yellow Grosbeak	<i>Mycerobas icteriodes</i>	White-winged Grosbeak	<i>Mycerobas carnipes</i>	West	Winter	0.004	75	8
Collared Grosbeak	<i>Mycerobas affinis</i>	White-winged Grosbeak	<i>Mycerobas carnipes</i>	West	Winter	0.001	23	8
Plumbeous Water Redstart	<i>Phoenicurus fuliginosus</i>	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	West	Winter	1.457	26	20
Plumbeous Water Redstart	<i>Phoenicurus fuliginosus</i>	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	West	Winter	0.229	26	32
Plumbeous Water Redstart	<i>Phoenicurus fuliginosus</i>	Blue-capped Redstart	<i>Phoenicurus caeruleocephala</i>	West	Winter	0.327	26	36
White-capped Redstart	<i>Phoenicurus leucocephalus</i>	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	West	Winter	0.335	20	32
White-capped Redstart	<i>Phoenicurus leucocephalus</i>	Blue-capped Redstart	<i>Phoenicurus caeruleocephala</i>	West	Winter	0.511	20	36
Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	Blue-capped Redstart	<i>Phoenicurus caeruleocephala</i>	West	Winter	2.450	32	36
Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	West	Winter	1.478	7	52
Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	Whistler's Warbler	<i>Phylloscopus whistleri</i>	West	Winter	0.351	7	14
Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	Buff-barred Warbler	<i>Phylloscopus pulcher</i>	West	Winter	0.181	7	30
Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	West	Winter	0.198	7	23
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Whistler's Warbler	<i>Phylloscopus whistleri</i>	West	Winter	0.193	52	14
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Buff-barred Warbler	<i>Phylloscopus pulcher</i>	West	Winter	0.193	52	30
Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	West	Winter	0.185	52	23
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Buff-barred Warbler	<i>Phylloscopus pulcher</i>	West	Winter	0.065	14	30
Whistler's Warbler	<i>Phylloscopus whistleri</i>	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	West	Winter	0.074	14	23
Buff-barred Warbler	<i>Phylloscopus pulcher</i>	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	West	Winter	2.355	30	23