

**Explanation of our data matrices, consisting of actual species
distributions on Bismarck and Solomon Islands**

The appended data matrices consist of two tables for each set of islands. For each set of islands, the two tables are labeled “as collected” and “as analyzed.” In each case, the data “as collected” distinguish between individual allospecies recorded on each island. The data “as analyzed” are grouped by superspecies for reasons we explain below and subject to several caveats which we will also explain.

Our Bismarck and Solomon data matrices are modified from the island-by-island distributions of each Bismarck and Solomon species given in Appendix 1 of Mayr and Diamond (2001), modified by the omission of five species, the omission of one island, and the addition of 108 other islands.

Species analyzed. Mayr and Diamond give distributions of 195 “zoogeographic species” (see below). Our analysis, and many analyses of Mayr and Diamond, omit five of those species: *Casuarium bennetti*, because it was probably introduced prehistorically by humans; *Gymnocrex plumbeiventris*, because it is based on a single record whose island locality is uncertain; and *Pelecanus conspicillatus*, *Scythrops novaehollandiae*, and

Halcyon sancta, because most Bismarck and Solomon records represent winter visitors or vagrants. Appendix 1 of Mayr and Diamond identified some species presence records on islands as vagrants, because the record evidently refers to a vagrant individual or individuals rather than a resident population on that island; we omit such records of vagrants.

Islands. Appendix 1 of Mayr and Diamond gave bird distributions on 31 Bismarck islands and 45 Solomon islands. Our data matrix includes all of these islands, except for the omission of the Solomon island of Bagga, because it was known to have been incompletely surveyed. (Mayr and Diamond listed Bagga's known species records anyway, because many of the known records are of distributional interest). Tables 9.1 and 9.2 of Mayr and Diamond (2001) give the area, elevation, and isolation of all 75 of those islands.

In addition, we give species lists for 10 small Bismarck islands and 98 small Solomon islands for which Mayr and Diamond did not tabulate species records. The 10 Bismarck islands are the columns "Tambiu" through "Malai" of our Bismarck chart; all 10 of these islands lie near western New Britain and Umboi, and their areas, elevations, and isolations are given in Table 9.1

of Mayr and Diamond. The 98 Solomon islands are the columns “Kicha” through “Roviana” of our Solomon data matrix. For the first 15 of those 98 islands (Kicha through Bagora), Table 9.2 of Mayr and Diamond (2001) gives the area, elevation, and isolation. The locations of these 98 islands, considering island columns from left to right in our Solomon distribution chart, are as follows: Kicha is near Gatukai; Kanasata through Nusave are in the Shortland group; Dalakalonga and Nugu are in the Florida group; Kotcha is near Guadalcanal; Kundu-kundu and Nusalavata are near New Georgia; New 1 ... to Bagora are in the Shortland group; and Near Vesolo ... to Roviana are near New Georgia, in Roviana and Wana Wana lagoons.

Superspecies. Bird field guides refer simply to bird “species.” This shorthand glosses over frequent debates among taxonomists about whether to classify similar and obviously closely related populations occupying different islands as different species, or else as different subspecies of the same species. We shall now explain at length the meaning of subspecies, species, allospecies, and superspecies, as background to understanding our data tables. Chapter 16 of Mayr and Diamond (2001) provides more detailed discussion.

In our tables “as collected” we list the name of each species or allospecies, then, when applicable, the name of the superspecies to which it belongs.

Ever since Darwin, biologists have debated the meaning of species. In particular, biologists have debated whether species are arbitrarily delineated by taxonomists from a continuum of individual variation in nature, or whether species correspond to a biological reality. Many biologists, including Mayr and Diamond (2001), adopt the so-called biological species concept initially formulated by Mayr. According to this concept, species are groups of interbreeding natural populations that are reproductively isolated from other such groups.

This definition recognizes a non-arbitrary biological reality familiar to any local naturalist. At any given location, most individual plants and animals are seen to belong to recognizably distinct units, most of which hybridize rarely or never with other such units. Those units are termed species. Thus, to a local naturalist, species are not figments of the taxonomist’s mind, but they correspond to a biological reality caused by non-interbreeding, which in turn results from so-called isolating mechanisms (behavioral as well as genetic)

such that individuals of different species units rarely or never interbreed with each other.

When one moves from one geographic location to another nearby location, one is likely to encounter many of those same population units, but one sometimes notices geographic differences in appearance or songs or genetic markers between otherwise similar and presumably equivalent populations at different locations. Should those geographic counterparts be considered as local varieties of the same species or else as different species? In effect, this question asks whether the geographic counterparts would or would not interbreed if they came in contact. In mainland situations, one can often answer this question by following an interconnecting geographic chain of populations, and observing whether or not the counterparts intergrade in space and whether they interbreed where they meet. If they do intergrade and interbreed, one considers them as belonging to the same species; but if the geographic counterparts at different points in the spatial change are nevertheless sufficiently distinct, taxonomists often recognize and name the geographic counterparts as different subspecies of the same species.

However, in contrast to species, which are real and non-arbitrary at a given

location, the division of a geographic chain of interbreeding populations into subspecies involves arbitrariness.

This test for whether geographic counterparts are subspecies or species requires that the counterparts actually meet, so that one can observe whether they interbreed. In island situations, where the counterparts occur on separate islands, one cannot apply that test, unless one can actually observe the behavior of vagrants from one island reaching the other island. Hence, taxonomists deduce whether the two island populations would be likely to interbreed if they came in contact, by comparing their distinctness (e.g., in appearance or song or genes or DNA) with the distinctness of mainland populations that do contact each other, and hence that are known either to interbreed or not to interbreed.

This decision about whether to rank geographically counterpart populations on separate islands as subspecies of the same species or as separate species thus involves an informed guess about whether they will interbreed. Taxonomists often disagree about this guess, and thus about the species-versus-subspecies status of island populations.

However, for our purposes, these debates about species or subspecies

status are irrelevant, for the following reason. Taxonomists who guess that such geographic counterparts have crossed the evolutionary line from subspecies to species employ the concept of superspecies. A superspecies is defined as a group of closely related populations that occur at different geographic localities, but that are thought to be reproductively isolated. The units of a superspecies — i.e., the separate geographic populations that one considers unlikely to interbreed, and hence not to be subspecies — are called allospecies. Taxonomists in island situations, such as the Bismarcks and Solomons, thus must decide whether to rank obviously related island populations as allospecies of the same superspecies, or else as subspecies of the same species. (By convention, taxonomists use square brackets for the name of a superspecies).

Our analysis is concerned with coexistence patterns between biological units, each of which is a separate “species” (to use the vernacular term). It makes no difference to us whether counterpart populations on different islands are ranked as subspecies or as allospecies: in either case, they constitute a unit (a chain or set of populations in space). In more detail, some sets of geographically counterpart populations are so similar to each other

that all taxonomists agree that they constitute a single species not divisible into allospecies. One labels such a species as an “isolated species” not forming part of a superspecies. The unit of analysis for Mayr and Diamond, for our study, and for the purposes of any other community ecologist interested in “species coexistence” is thus what is termed the “zoogeographic species,” meaning either a superspecies or else an isolated species not forming part of a superspecies.

In the tables “as analyzed” we group allospecies into superspecies. We recognize the same superspecies as do Mayr and Diamond, with just three exceptions. They are highlighted in orange in the tables. Those exceptions arise from practical taxonomic problems in how to describe early stages in speciation. When an ancestral population breaks up into geographically separate daughter populations that become reproductively isolated, one of those daughter populations (A) may start to invade the range of the other daughter population (B), and may continue to expand until it has occupied the entirety of B’s range. Initially, there is zero geographic overlap; finally, there is complete overlap (complete sympatry), such that both species share the same geographic range, or at least one species shares the entire geographic

range of the other. At intermediate times, there is a spectrum of all possible degrees of overlap; that spectrum is traversed in time as the invasion proceeds (and the process of the invasion has been actually observed in some cases, such as the now-unfolding case of the Boat-tailed Grackle and the Great-tailed Grackle expanding into each other's ranges in Texas). At any moment in time, different pairs of populations represent snapshots at different points along that spectrum. Table 22.1 of Mayr and Diamond (2001) analyzes all 19 such pairs of taxa representing stages of speciation in the Bismarcks and Solomons, and classifies each pair by geographic overlap ranging from less than 25% to 100%.

How should one divide up this continuum in analyzing it? For our analyses of pairwise coexistence, the answer is clear: if closely related daughter populations A and B have any overlap at all, then they have to be analyzed as separate units, and they cannot be considered to belong to the same superspecies. But for evolutionary analyses such as those of Mayr and Diamond (2001), one need not be so absolutist, and different taxonomists adopt different criteria. Many taxonomists still take the absolutist position: if A and B have any overlap at all, then they are considered as separate species,

not as members of the same superspecies. Other taxonomists, such as van Bemmelen and Cain, point out that the absolutist position forces one to make arbitrary decisions about dismembering superspecies, and that in taxonomic monographs it may be more useful to talk about superspecies with some small degree of geographic overlap between A and B. Mayr and Diamond adopted that broader view of superspecies, especially as they discussed each separate case individually anyway, and as their Appendix gathered taxonomic and distributional information about each superspecies; it made no sense for them to dismember a superspecies unnecessarily just because of a small degree of overlap, and to give that taxonomic and distributional information twice.

In practice, there are only three cases where our absolutist superspecies definition, which is also the commonest one among taxonomists, results in a different treatment from that of Mayr and Diamond. Mayr and Diamond treated the fruit doves *Ptilinopus rivoli* and *Ptilinopus solomonensis* as allospecies of the same superspecies. (They are listed as 54A and 54B in their Appendix 1 and shown in map 7.) *P. rivoli* has a large range without *solomonensis* to the west and *solomonensis* has a large range without *rivoli* to

the east, but the two taxa coexist on two Bismarck islands and on two islands of the New Guinea region, and they are broadly sympatric with mostly checkerboard exclusion over most of the Bismarcks and the islands along the northwest coast of New Guinea. Mayr and Diamond similarly treated the cuckoo-doves *Macropygia nigrirostris* and *M. mackinlayi* as allospecies of the same superspecies. (They are listed 67A and 67B in their Appendix 1 and shown in map 12.) As in the previous *Ptilinopus* case, *M. nigrirostris* has a large range without *M. mackinlayi* to the west, *M. mackinlayi* has a large range without *M. nigrirostris* to the east, but the two forms coexist on one island in the New Guinea region, and each occurs as vagrants on Bismarck islands where the other is resident. Finally, Mayr and Diamond placed the parrots *L. albidinucha* and *L. hypoinochrous* in the same superspecies along with the Solomon representative *L. chlorocercus*, because these populations are very similar but *L. albidinucha*'s entire geographic range of New Ireland is occupied by *L. hypoinochrous*, which also occupies many other islands. In all three of these species pairs, we, unlike Mayr and Diamond, must treat the two species as separate zoogeographic species, rather than as allospecies of the same superspecies. (These allospecies 78A, B and C, are shown in map 16.)

It should be stressed that, for the purposes of our analysis of species coexistence, our recognition of superspecies rather than allospecies as the unit of analysis is conservative. If we took allospecies as the unit of analysis, then we would have dozens of additional cases of units with mutually exclusive geographic ranges not expected by chance.

Finally, we mention that Northern Melanesia offers only one case in which different allospecies divide up the same island, rather than occupying different islands. This example is highlighted in orange in the table. It involves the grass-finch superspecies *Lonchura [spectabilis]*, in which the allospecies *L. forbesi* occupies the southern part of the long narrow island of New Ireland, and the allospecies *L. hunsteini* occupies the northern end of New Ireland plus New Hanover, the next island to the north. Because our unit of analysis is the superspecies, this sharing of New Ireland by two allospecies poses no problems, because the superspecies still just counts as a single unit of presence on New Ireland. Such dividing-up of a single landmass by different allospecies of the same superspecies is of course far commoner on continents and on large islands such as New Guinea; the North American

avifauna offers many cases in which a superspecies is represented by different allospecies in the western and the eastern United States.

37 A	Rallidae	Gallirallus	philippensis	philippensis	14	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	1	1	0	0	0	1	0	0	1	1	0	0	0
38	Rallidae	Gallirallus	insignis		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	Rallidae	Rallina	tricolor	eurizonoides	3	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	Rallidae	Porzana	tabuensis	tabuensis	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
43	Rallidae	Poliolimnas	cinereus	cinereus	7	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0
44	Rallidae	Amauornis	olivaceus	akool	13	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	0	1	1	0	1	1	
46	Rallidae	Porphyrio	porphyrio		7	1	0	1	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	
47	Jacaniidae	Irediparra	gallinacea		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
48	Charadriidae	Charadrius	dubius		2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
49	Recurvirostridae	Himantopus	leucocephalus	himantopus	3	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
50	Burhinidae	Esacus	magnirostris	magnirostris	14	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	1	1	
51	Columbidae	Ptilinopus	superbus		12	1	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	0	0	
53	Columbidae	Ptilinopus	insolitus	hyogaster	17	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	
54 A	Columbidae	Ptilinopus	rivoli	rivoli	9	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	1	0	1	1	0	1	0	
54 B	Columbidae	Ptilinopus	solomonensis	rivoli	22	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	0	0	0	0	0	0	1	1	
55	Columbidae	Ptilinopus	viridis		3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	
56	Columbidae	Ducula	pacifica	pacifica	5	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
57	Columbidae	Ducula	rubricera	myristicivora	14	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	1	0	1	1	1	1	0	1	
58	Columbidae	Ducula	finschii	rufigaster	4	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
59	Columbidae	Ducula	pistrinaria	rosacea	29	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
61	Columbidae	Ducula	melanochoera	pinon	3	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
62	Columbidae	Ducula	spilorrhhoa	bicolor	15	1	1	1	0	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
63 A	Columbidae	Gymnophaps	albertisii	albertisii	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
64	Columbidae	Columba	vitiensis	leucomela	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
65	Columbidae	Columba	pallidiceps		2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
66	Columbidae	Macropygia	amboinensis	amboinensis	16	1	1	1	0	1	0	0	0	0	0	0	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	
67 A	Columbidae	Macropygia	nigrirostris	ruficeps	5	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	
67 B	Columbidae	Macropygia	mackinlayi	ruficeps	15	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0	0	1	0	0	1	0	0	1	0	0	0	1	1
68 A	Columbidae	Reinwardtoena	browni	reinwardtii	12	1	1	1	0	1	1	1	0	0	0	0	0	1	0	1	0	0	1	0	1	0	1	0	1	0	1	0	
69	Columbidae	Chalcophaps	stephani		25	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	
70	Columbidae	Henicophaps	foersteri	albifrons	3	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
71	Columbidae	Gallicolumba	beccarii	canifrons	17	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	1	1	0	1	1	1	1	
73	Columbidae	Gallicolumba	jobiensis	erythroptera	9	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	1	0	1	0	
75	Columbidae	Caloenas	nicobarica		26	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	
76	Psittacidae	Chalcopsitta	cardinalis		4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
77	Psittacidae	Trichoglossus	haematodus	ornatus	28	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	
78 A	Psittacidae	Lorius	albidinucha	lory	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
78 C	Psittacidae	Lorius	hypoinochrous	lory	11	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	1	0	1	0	1	0	
79 A	Psittacidae	Charmosyna	rubrigularis	palmarum	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
80	Psittacidae	Charmosyna	placensis		20	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	
82	Psittacidae	Micropsitta	bruijnii		2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
83 A	Psittacidae	Micropsitta	pusio	pusio	9	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	
83 B	Psittacidae	Micropsitta	meeki	pusio	4	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
83 C	Psittacidae	Micropsitta	finschii	pusio	5	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	
84	Psittacidae	Cacatua	galerita	alba	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
86	Psittacidae	Eclectus	roratus		16	1	1	1	0	1	1	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	1	1	1	1	0	0	
87	Psittacidae	Geoffroyus	heteroclitus	heteroclitus	10	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	1	0	1	0	1	0	
88	Psittacidae	Loriculus	tener	aurantifrons	4	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
89	Cuculidae	Cacomantis	variolosus		16	1	1	1	0	1	1	0	0	0	0	1	0	1	1	1	1	0	0	1	0	1	0	1	1	1	0	0	

150	Monarchidae	Monarcha	cinerascens		27	0	0	0	1	0	1	1	1	1	1	1	1	1	0	1	0	1	1	0	1	1	1	1	1	0	1	1			
152 A	Monarchidae	Monarcha	infelix	manadensis	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
152 B	Monarchidae	Monarcha	menckei	manadensis	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
152 C	Monarchidae	Monarcha	verticalis	manadensis	6	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	
153	Monarchidae	Monarcha	chrysomela		5	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0		
154	Monarchidae	Myiagra	alecto		16	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	1	1	1	1	0	1		
155	Monarchidae	Myiagra	hebetior		6	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	
157	Eopsaltriidae	Monachella	muelleriana		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
159	Pachycephalidae	Pachycephala	pectoralis	pectoralis	11	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	1	0	0	1	0		
160	Pachycephalidae	Pachycephala	melanura		13	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	
162 A	Dicaeidae	Dicaeum	eximium	erythrothorax	7	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0		
163	Nectariniidae	Nectarinia	sericea	sperata	14	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	1	1	1	0	1	0	1		
164	Nectariniidae	Nectarinia	jugularis	jugularis	24	1	1	1	1	1	0	0	0	1	1	0	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	0	1		
165	Zosteropidae	Zosterops	atrifrons	atriceps	6	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
167 A	Zosteropidae	Zosterops	griseotinctus	griseotinctus	4	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
172	Meliphagidae	Myzomela	cineracea	eques	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
173	Meliphagidae	Myzomela	cruentata		5	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0		
174	Meliphagidae	Myzomela	pulchella		1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
175 B	Meliphagidae	Myzomela	erythromelas	cardinalis	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
176	Meliphagidae	Myzomela	sclateri		7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	
177 A	Meliphagidae	Myzomela	pammelaena	lafargei	23	0	0	0	1	0	1	1	1	1	1	1	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	
178 A	Meliphagidae	Philemon	cockerelli	moluccensis	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
178 B	Meliphagidae	Philemon	eichorni	moluccensis	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
178 C	Meliphagidae	Philemon	albitorques	moluccensis	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	Meliphagidae	Melidectes	whitemanensis		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
183	Estrildidae	Erythrura	trichroa	trichroa	9	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0		
184 A	Estrildidae	Lonchura	spectabilis	spectabilis	5	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	
184 B	Estrildidae	Lonchura	forbesi	spectabilis	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
184 C	Estrildidae	Lonchura	hunsteini	spectabilis	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185	Estrildidae	Lonchura	melaena	castaneothorax	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
186	Sturnidae	Aplonis	cantoroides	cantoroides	29	1	1	1	1	1	0	1	1	0	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
187 A	Sturnidae	Aplonis	feadensis	feadensis	4	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
189	Sturnidae	Aplonis	metallica		24	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
191	Sturnidae	Mino	dumontii		6	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
192 A	Dicruridae	Dicrurus	hottentottus	hottentottus	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
192 B	Dicruridae	Dicrurus	megarhynchus	hottentottus	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193	Artamidae	Artamus	insignis		2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
194	Corvidae	Corvus	orru		11	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	

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37 A	Rallidae	Gallirallus	philippensis	philippensis	14	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	1	1	0	0	0	1	0	0	1	1	0	0	0
38	Rallidae	Gallirallus	insignis		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
39	Rallidae	Rallina	tricolor	eurizonoides	3	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
42	Rallidae	Porzana	tabuensis	tabuensis	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0		
43	Rallidae	Poliolimnas	cinereus	cinereus	7	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0		
44	Rallidae	Amauornis	olivaceus	akool	13	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	0	1	1	0	1	1		
46	Rallidae	Porphyrio	porphyrio		7	1	0	1	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0		
47	Jacaniidae	Irediparra	gallinacea		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
48	Charadriidae	Charadrius	dubius		2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
49	Recurvirostridae	Himantopus	leucocephalus	himantopus	3	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
50	Burhinidae	Esacus	magnirostris	magnirostris	14	1	1	1	1	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	1	1		
51	Columbidae	Ptilinopus	superbus		12	1	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	0		
53	Columbidae	Ptilinopus	insolitus	hyogaster	17	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1		
54 A	Columbidae	Ptilinopus	rivoli	rivoli	9	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	1	0	1	1	0	0		
54 B	Columbidae	Ptilinopus	solomonensis	rivoli	22	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	0	0	0	0	0	0	1	1		
55	Columbidae	Ptilinopus	viridis		3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0		
56	Columbidae	Ducula	pacifica	pacifica	5	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
57	Columbidae	Ducula	rubricera	myristicivora	14	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	1	1	1	1	1	1	0	1		
58	Columbidae	Ducula	finschii	rufigaster	4	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0		
59	Columbidae	Ducula	pistrinaria	rosacea	29	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0		
61	Columbidae	Ducula	melanochroa	pinon	3	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
62	Columbidae	Ducula	spilorrhhoa	bicolor	15	1	1	1	0	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1		
63 A	Columbidae	Gymnophaps	albertisii	albertisii	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
64	Columbidae	Columba	vitiensis	leucomela	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
65	Columbidae	Columba	pallidiceps		2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
66	Columbidae	Macropygia	amboinensis	amboinensis	16	1	1	1	0	1	0	0	0	0	0	0	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1		
67 A	Columbidae	Macropygia	nigrirostris	ruficeps	5	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0		
67 B	Columbidae	Macropygia	mackinlayi	ruficeps	15	0	0	0	1	1	1	1	1	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	1	1		
68 A	Columbidae	Reinwardtoena	browni	reinwardtii	12	1	1	1	0	1	1	1	0	0	0	0	1	0	1	0	0	1	0	1	0	1	0	1	0	1	0		
69	Columbidae	Chalcophaps	stephani		25	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1		
70	Columbidae	Henicophaps	foersteri	albifrons	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0		
71	Columbidae	Gallicolumba	beccarii	canifrons	17	1	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	1	1	0	1	1	1	1		
73	Columbidae	Gallicolumba	jobiensis	erythroptera	9	1	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	1	0	1	0		
75	Columbidae	Caloenas	nicobarica		26	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
76	Psittacidae	Chalcopsitta	cardinalis		4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	
77	Psittacidae	Trichoglossus	haematodus	ornatus	28	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	
78 A	Psittacidae	Lorius	albidinucha	lory	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
78 C	Psittacidae	Lorius	hypoinochrous	lory	11	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	1	0	1	0	1		
79 A	Psittacidae	Charmosyna	rubrigularis	palmarum	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
80	Psittacidae	Charmosyna	placensis		20	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1		
82	Psittacidae	Micropsitta	bruijnii		2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
83 A	Psittacidae	Micropsitta																															
83 B	Psittacidae	Micropsitta																															
83 C	Psittacidae	Micropsitta		pusio	18	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	0	1	1	0	1	0	1	0	1	0	1	1	
84	Psittacidae	Cacatua	galerita	alba	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
86	Psittacidae	Eclectus	roratus		16	1	1	1	0	1	1	0	0	0	0	0	0	1	1	1	0	0	1	0	1	1	1	1	1	0	0		
87	Psittacidae	Geoffroyus	heteroclitus	heteroclitus	10	1	1	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	1	0	1	0	1	0		
88	Psittacidae	Loriculus	tener	aurantifrons	4	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0		
89	Cuculidae	Cacomantis	variolosus		16	1	1	1	0	1	1	0	0	0	0	1	0	1	1	1	1	0	0	1	0	1	0	1	1	1	0	0	

150	Monarchidae	Monarcha	cinerascens		27	0	0	0	1	0	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	1	1	1	1	1	0	1	1							
152 A	Monarchidae	Monarcha																																						
152 B	Monarchidae	Monarcha																																						
152 C	Monarchidae	Monarcha	manadensis		9	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0						
153	Monarchidae	Monarcha	chrysomela		5	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
154	Monarchidae	Myiagra	alecto		16	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	1	1	1	1	0	1						
155	Monarchidae	Myiagra	hebetior		6	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0					
157	Eopsaltriidae	Monachella	muelleriana		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
159	Pachycephalidae	Pachycephala	pectoralis	pectoralis	11	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	1	0	0	1	0	1	0				
160	Pachycephalidae	Pachycephala	melanura		13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0				
162 A	Dicaeidae	Dicaeum	eximium	erythrothorax	7	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0				
163	Nectariniidae	Nectarinia	sericea	sperata	14	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	1	1	1	0	1	0	1	0	1				
164	Nectariniidae	Nectarinia	jugularis	jugularis	24	1	1	1	1	1	0	0	0	1	1	0	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	0	1	0	1			
165	Zosteropidae	Zosterops	atrifrons	atriceps	6	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
167 A	Zosteropidae	Zosterops	griseotinctus	griseotinctus	4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		
172	Meliphagidae	Myzomela	cineracea	eques	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
173	Meliphagidae	Myzomela	cruentata		5	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
174	Meliphagidae	Myzomela	pulchella		1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
175 B	Meliphagidae	Myzomela	erythromelas	cardinalis	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
176	Meliphagidae	Myzomela	sclateri		7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
177 A	Meliphagidae	Myzomela	pammelaena	lafargei	23	0	0	0	1	0	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	
178 A	Meliphagidae	Philemon																																						
178 B	Meliphagidae	Philemon																																						
178 C	Meliphagidae	Philemon	moluccensis		4	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
179	Meliphagidae	Melidectes	whitemanensis		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
183	Estrildidae	Erythrura	trichroa	trichroa	9	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0		
184 A	Estrildidae	Lonchura																																						
184 B	Estrildidae	Lonchura																																						
184 C	Estrildidae	Lonchura	spectabilis		7*	1	1*	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
185	Estrildidae	Lonchura	melaena	castaneothorax	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
186	Sturnidae	Aplonis	cantoroides	cantoroides	29	1	1	1	1	1	0	1	1	0	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
187 A	Sturnidae	Aplonis	feadensis	feadensis	4	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
189	Sturnidae	Aplonis	metallica		24	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
191	Sturnidae	Mino	dumontii		6	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
192 A	Dicruridae	Dicrurus																																						
192 B	Dicruridae	Dicrurus	hottentottus		4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
193	Artamidae	Artamus	insignis		2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
194	Corvidae	Corvus	orru		11	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1		

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