

## **SUPPLEMENTARY MATERIALS**

### **Gut Microbiota Composition of Wild Birds in Different Habitats in Suai Niah, Miri, Sarawak**

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**Table S1A (a).** The percentage composition of bacteria in each bird species by the phylum level

<b>Bird Species</b>	<b><i>Firmicutes</i></b>	<b><i>Bacteroidetes</i></b>	<b><i>Proteobacteria</i></b>	<b><i>Actinobacteria</i></b>
<i>Arachnothera longirostra</i>	0	8.369	69.742	21.888
<i>Passer montanus</i>	29.16769	69.203	0	1.63
<i>Spilopelia chinensis</i>	35.616	0	43.151	9.817
<i>Copsychus saularis_1</i>	36.137	51.246	6.075	6.542
<i>Ceyx rufidorsa</i>	53.906	0	7.813	8.594
<i>Acrocephalus orientalis</i>	62.062	13.619	24.319	0
<i>Anthreptes rhololaemus</i>	63.614	9.88	2.892	0
<i>Stachyris poliocephala</i>	71.937	0	28.063	0
<i>Copsychus saularis_2</i>	78.885	0	0	0
<i>Geopelia striata</i>	75.963	17.565	0	0
<i>Amaurornis phoenicurus</i>	86.747	0	8.434	0
<i>Artamus leucorhynchus</i>	91.944	8.056	0	0
<i>Dicrurus aeneus</i>	95.971	0	0	0
<i>Lanius schach</i>	100	0	0	0
<i>Dicrurus annectens</i>	100	0	0	0

**Table S1A(b).** The percentage composition of bacteria in each bird species by the phylum level

<b>Bird Species</b>	<b><i>Fusobacteria</i></b>	<b><i>Patascibacteria</i></b>	<b><i>Epsilonbacteraeota</i></b>
<i>Arachnothera longirostra</i>	0	0	0
<i>Passer montanus</i>	0	0	0
<i>Spilopelia chinensis</i>	10.046	0	0
<i>Copsychus saularis_1</i>	0	0	0
<i>Ceyx rufidorsa</i>	0	0	0
<i>Acrocephalus orientalis</i>	0	0	0
<i>Anthreptes rhololaemus</i>	0	6.506	0
<i>Stachyris poliocephala</i>	0	0	0
<i>Copsychus saularis_2</i>	0	0	0
<i>Geopelia striata</i>	0	0	0
<i>Amaurornis phoenicurus</i>	0	0	4.819
<i>Artamus leucorhynchus</i>	0	0	0
<i>Dicrurus aeneus</i>	0	0	0
<i>Lanius schach</i>	0	0	0
<i>Dicrurus annectens</i>	0	0	0

**Table S1A(c).** Percentages of the composition of bacteria in each bird species by the phylum level

<b>Bird Species</b>	<b>Cyanobacteria</b>	<b>Chloroflexi</b>	<b>Unclassified</b>
<i>Arachnothera longirostra</i>	0	0	0
<i>Passer montanus</i>	0	0	0
<i>Spilopelia chinensis</i>	0	1.37	0
<i>Copsychus saularis_1</i>	0	0	0
<i>Ceyx rufidorsa</i>	29.688	0	0
<i>Acrocephalus orientalis</i>	0	0	0
<i>Anthreptes rhodolaemus</i>	17.108	0	0
<i>Stachyris poliocephala</i>	0	0	0
<i>Copsychus saularis_2</i>	26.115	0	0
<i>Geopelia striata</i>	2.773	0	3.698
<i>Amaurornis phoenicurus</i>	0	0	0
<i>Artamus leucorhynchus</i>	0	0	0
<i>Dicrurus aeneus</i>	4.029	0	0
<i>Lanius schach</i>	0	0	0
<i>Dicrurus annectens</i>	0	0	0

**Table S2A (a).** The percentage composition of bacteria in each bird species by class level

<b>Bird Species</b>	<b>Bacilli</b>	<b>Clostridia</b>	<b>Bacteroidia</b>	<b>Gammaproteobacteria</b>
<i>Arachnothera longirostra</i>	0	0	8.369	69.742
<i>Passer montanus</i>	17.029	12.138	69.203	0
<i>Spilopelia chinensis</i>	26.484	6.849	0	7.306
<i>Copsychus saularis_1</i>	25.857	10.28	51.246	0
<i>Ceyx rufidorsa</i>	53.906	0	0	7.813
<i>Acrocephalus orientalis</i>	39.883	18.482	13.619	24.319
<i>Anthreptes rhodolaemus</i>	0	37.59	9.88	0
<i>Stachyris poliocephala</i>	0	71.937	0	0
<i>Copsychus saularis_2</i>	73.885	0	0	2.648
<i>Geopelia striata</i>	59.938	5.547	17.565	0
<i>Amaurornis phoenicurus</i>	14.458	72.289	0	8.434
<i>Artamus leucorhynchus</i>	40.278	48.889	8.056	0
<i>Dicrurus aeneus</i>	68.864	12.454		
<i>Lanius schach</i>	99.741			
<i>Dicrurus annectens</i>	71.728	28.272		

**Table S2A(b).** The percentage composition of bacteria in each bird species by class level

<b>Bird Species</b>	<b><i>Negativicutes</i></b>	<b><i>Actinobacteria</i></b>	<b><i>Alphaproteobacteria</i></b>
<i>Arachnothera longirostra</i>	0	21.888	0
<i>Passer montanus</i>	0	1.63	0
<i>Spilopelia chinensis</i>	2.283	7.763	23.744
<i>Copsychus saularis_1</i>	0	6.542	0
<i>Ceyx rufidorsa</i>	0	8.594	0
<i>Acrocephalus orientalis</i>	3.696	0	0
<i>Anthreptes rhodolaemus</i>	26.024	0	2.892
<i>Stachyris poliocephala</i>	0	0	28.063
<i>Copsychus saularis_2</i>	0	0	0
<i>Geopelia striata</i>	10.478	0	0
<i>Amaurornis phoenicurus</i>	0	0	0
<i>Artamus leucorhynchus</i>	2.778	0	0
<i>Dicrurus aeneus</i>	0	0	0
<i>Lanius schach</i>	0	0	0
<i>Dicrurus annectens</i>	0	0	0

**Table S2A(c).** The percentage composition of bacteria in each bird species by class level

<b>Bird Species</b>	<b><i>Oxyphotobacteria</i></b>	<b>Unclassified_</b>	<b><i>Proteobacteria</i></b>	<b><i>Fusobacteriia</i></b>
<i>Arachnothera longirostra</i>	0		0	0
<i>Passer montanus</i>	0		0	0
<i>Spilopelia chinensis</i>	0		12.1	10.046
<i>Copsychus saularis_1</i>	0		0	0
<i>Ceyx rufidorsa</i>	29.688		0	0
<i>Acrocephalus orientalis</i>	0		0	0
<i>Anthreptes rhodolaemus</i>	17.108		0	0
<i>Stachyris poliocephala</i>	0		0	0
<i>Copsychus saularis_2</i>	26.115		0	0
<i>Geopelia striata</i>	2.773		0	0
<i>Amaurornis phoenicurus</i>	0		0	0
<i>Artamus leucorhynchus</i>	0		0	0
<i>Dicrurus aeneus</i>	4.029		0	0
<i>Lanius schach</i>	0		0	0
<i>Dicrurus annectens</i>	0		0	0

**Table S2A(d).** The percentage composition of bacteria in each bird species by class level

<b>Bird Species</b>	<b>Unclassified_ Firmicutes</b>	<b>Saccharimonadia</b>	<b>Unclassified_ Bacteria</b>
<i>Arachnothera longirostra</i>	0	0	0
<i>Passer montanus</i>	0	0	0
<i>Spilopelia chinensis</i>	0	0	0
<i>Copsychus saularis_1</i>	0	0	0
<i>Ceyx rufidorsa</i>	0	0	0
<i>Acrocephalus orientalis</i>	0	0	0
<i>Anthreptes rhodolaemus</i>	0	6.506	0
<i>Stachyris poliocephala</i>	0	0	0
<i>Copsychus saularis_2</i>	0	0	0
<i>Geopelia striata</i>	0	0	3.698
<i>Amaurornis phoenicurus</i>	0	0	0
<i>Artamus leucorynchus</i>	0	0	0
<i>Dicrurus aeneus</i>	14.652	0	0
<i>Lanius schach</i>	0	0	0
<i>Dicrurus annectens</i>	0	0	0

**Table S2A(e).** The percentage composition of bacteria in each bird species by class level

<b>Bird Species</b>	<b>Deltaproteobacteria</b>	<b>Coriobacteria</b>	<b>Campylobacteria</b>	<b>Ktedonobacteria</b>
<i>Arachnothera longirostra</i>	0	0	0	0
<i>Passer montanus</i>	0	0	0	0
<i>Spilopelia chinensis</i>	0	2.055	0	1.37
<i>Copsychus saularis_1</i>	3.427	0	0	0
<i>Ceyx rufidorsa</i>	0	0	0	0
<i>Acrocephalus orientalis</i>	0	0	0	0
<i>Anthreptes rhodolaemus</i>	0	0	0	0
<i>Stachyris poliocephala</i>	0	0	0	0
<i>Copsychus saularis_2</i>	0	0	0	0
<i>Geopelia striata</i>	0	0	0	0
<i>Amaurornis phoenicurus</i>	0	0	4.819	0
<i>Artamus leucorynchus</i>	0	0	0	0
<i>Dicrurus aeneus</i>	0	0	0	0
<i>Lanius schach</i>	0	0	0	0
<i>Dicrurus annectens</i>	0	0	0	0