

## From the tropics to the poles: the basal metabolic rate of birds is associated with habitat temperature, not productivity

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*Supplementary Online Appendix:* Body mass (M, g), basal metabolic rate (BMR, ml O<sub>2</sub> min<sup>-1</sup>), capture locality (latitude and longitude, °), habitat annual net primary productivity (NPP, g C m<sup>-2</sup>), mean monthly precipitation (P, mm), intra-annual coefficient of variation of precipitation (P<sub>CV</sub>), mean annual ambient temperature (T<sub>a</sub>, °C), and annual temperature range (T<sub>r</sub>, °C).

<b>Species</b>	<b>M</b>	<b>BMR</b>	<b>Lat</b>	<b>Long</b>	<b>NPP</b>	<b>P</b>	<b>P<sub>CV</sub></b>	<b>T<sub>a</sub></b>	<b>T<sub>r</sub></b>	<b>Captivity</b>	<b>Migratory Pattern</b>	<b>Reference</b>
<i>Psaltriparus minimus</i>	5.5	0.363	34.1	-118.2	344.7	22.7	1.086	12.9	11.7	7+ Days	sedentary	8
<i>Sephanoides sephanoides</i>	5.74	0.303	-33.3	-71.2	558.2	50.9	1.049	13.0	12.8	7+ Days	sedentary	19
<i>Todus mexicanus</i>	6.05	0.336	18.1	-66.3	1120	121.5	0.306	24.3	6.1	Overnight	sedentary	25
<i>Parula americana</i>	7	0.368	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Lichmera indistincta</i>	9	0.621	-31.5	116.6	499	43.6	0.814	17.6	13.6	7+ Days	sedentary	9
<i>Lonchura fuscans</i>	9.5	0.296	4.9	114.9	1143.5	272.0	0.235	26.3	7.6	Overnight	sedentary	32
<i>Acanthorhynchus tenuirostris</i>	9.7	0.743	-34.8	139.0	561.6	49.4	0.429	15.7	11.1	Overnight	sedentary	34
<i>Dendroica palmarum</i>	9.8	0.466	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Dendroica dominica</i>	9.8	0.480	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	sedentary	39
<i>Parus atricapillus</i>	10.3	0.710	42.4	-76.5	733.3	81.1	0.116	9.0	10.6	7+ Days	sedentary	27
<i>Geothlypis trichas</i>	10.6	0.514	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	sedentary	39
<i>Dendroica coronata</i>	11.5	0.564	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Zosterops lateralis</i>	11.78	0.477	-30.6	151.7	750.7	68.1	0.438	13.4	13.5	7+ Days	sedentary	21
<i>Lonchura malacca</i>	11.8	0.421	3.1	101.7	1115.3	202.2	0.280	24.9	9.5	1-7 Days	sedentary	11
<i>Spizella passerina</i>	11.9	0.575	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Wilsonia citrina</i>	12	0.642	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Pipra mentalis</i>	12.3	0.582	9.2	-79.8	829.7	244.2	0.563	26.0	6.5	1-7 Days	sedentary	1
<i>Lonchura maja</i>	12.8	0.454	3.1	101.7	1115.3	202.2	0.280	24.9	9.5	1-7 Days	sedentary	11
<i>Protonotaria citrea</i>	12.8	0.591	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Carduelis tristis</i>	12.8	0.988	42.3	-83.7	656	69.4	0.214	9.1	11.1	Overnight	sedentary	10

<b>Species</b>	<b>M</b>	<b>BMR</b>	<b>Lat</b>	<b>Long</b>	<b>NPP</b>	<b>P</b>	<b>P<sub>CV</sub></b>	<b>T<sub>a</sub></b>	<b>T<sub>r</sub></b>	<b>Captivity</b>	<b>Migratory Pattern</b>	<b>Reference</b>
<i>Luscinia cyane</i>	13.4	0.518	3.1	101.7	1115.3	202.2	0.280	24.9	9.5	Overnight	migratory	11
<i>Ammodramus savannarum</i>	13.8	0.531	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Hirundo tahitica</i>	14.07	0.528	3.1	101.7	1115.3	202.2	0.280	24.9	9.5	Overnight	sedentary	6
<i>Melospiza georgiana</i>	14.9	0.636	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Eremopterix nigriceps</i>	15.2	0.570	21.3	41.7	45.3	11.8	0.729	24.3	14.1	7+ Days	nomadic	29
<i>Manacus vitellinus</i>	15.5	0.695	9.2	-79.8	829.7	244.2	0.563	26.0	6.5	1-7 Days	sedentary	1
<i>Luscinia svecica</i>	15.5	0.826	59.8	18.8	505.7	49.4	0.301	5.9	6.9	1-7 Days	migratory	17
<i>Passerculus sandwichensis</i>	15.9	0.670	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Carduelis flammea</i>	16	0.719	66.0	16.1	321	53.1	0.370	-0.8	8.1	7+ Days	migratory	18
<i>Passerculus sandwichensis</i>	16.7	0.854	34.1	-119.1	456.3	27.1	1.045	16.2	10.7	7+ Days	sedentary	36
<i>Phylidonyris novaehollandiae</i>	17.3	0.947	-34.8	139.0	561.6	49.4	0.429	15.7	11.1	Overnight	sedentary	34
<i>Passer montanus</i>	17.5	0.590	3.1	101.7	1115.3	202.2	0.280	24.9	9.5	Overnight	sedentary	11
<i>Parus majora</i>	18.5	1.149	65.0	25.5	421.4	39.6	0.396	2.4	8.1	1-7 Days	sedentary	5
<i>Seiurus noveboracensis</i>	18.7	0.832	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Parus majorb</i>	18.8	0.994	55.7	13.1	681.5	47.6	0.241	8.0	6.5	1-7 Days	sedentary	5
<i>Seiurus aurocapillus</i>	19	0.719	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Melospiza melodia</i>	19.1	0.758	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Sitta carolinensis</i>	19.35	1.074	42.7	-97.0	534.5	53.3	0.584	9.2	12.7	Overnight	sedentary	16
<i>Luscinia svecicasvecica</i>	19.9	0.770	66.0	16.1	321	53.1	0.370	-0.8	8.1	7+ Days	migratory	18
<i>Zonotrichia albicollis</i>	20.2	0.842	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Eremalauda dunni</i>	20.6	0.830	22.3	41.8	32.4	7.6	1.030	25.5	14.0	7+ Days	sedentary	30
<i>Thamnophilus punctatus</i>	21	1.020	9.0	-79.7	829.7	244.2	0.563	26.0	6.5	Overnight	sedentary	31
<i>Amadina erythrocephala</i>	21.5	0.627	-28.9	24.8	279.2	29.3	0.699	17.5	16.6	7+ Days	nomadic	24
<i>Ammomanes deserti</i>	21.5	0.694	22.9	41.2	35.7	7.6	0.978	25.2	13.8	7+ Days	sedentary	29
<i>Poocetes gramineus</i>	21.5	0.817	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Acrocephalus arundinaceus</i>	21.9	0.764	3.1	101.7	1115.3	202.2	0.280	24.9	9.5	Overnight	migratory	11
<i>Calandrella rufescens</i>	23.6	1.092	49.4	46.9	281.6	26.3	0.168	7.1	10.6	7+ Days	sedentary	29
<i>Calandrella brachydactyla</i>	24	1.230	49.4	46.9	281.6	26.3	0.168	7.1	10.6	7+ Days	migratory	29
<i>Picoides pubescens</i>	24.05	1.232	42.7	-97.0	534.5	53.3	0.584	9.2	12.7	Overnight	sedentary	16
<i>Lichenostomus virescens</i>	25	1.057	-31.9	115.8	532.8	50.4	0.915	18.1	10.3	7+ Days	sedentary	9

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<i>Lullula arborea</i>	25.5	1.706	52.9	6.3	729.8	67.0	0.201	9.4	6.2	7+ Days	migratory	30
<i>Chersomanes albobasciata</i>	25.7	1.005	28.8	24.7	47.6	0.8	0.829	21.6	15.5	7+ Days	sedentary	29
<i>Eremophila alpestris</i>	26	1.334	33.3	-116.7	251	17.3	1.071	13.3	10.9	7+ Days	migratory	29
<i>Zonotrichia leucophrys</i>	26.1	1.018	29.7	-82.3	802.6	111.8	0.512	21.0	10.2	Overnight	migratory	39
<i>Pycnonotus finlaysoni</i>	26.3	0.671	3.1	101.7	1115.3	202.2	0.280	24.9	9.5	1-7 Days	sedentary	11
<i>Mirafra erythroptera</i>	27.3	1.244	24.0	15.1	50.1	0.4	1.236	24.0	15.6	7+ Days	sedentary	35
<i>Sialia mexicana</i>	27.5	1.260	33.8	-117.0	234.8	16.9	1.065	12.3	12.0	Overnight	migratory	26
<i>Pycnonotus goiavier</i>	28.6	0.730	3.1	101.7	1115.3	202.2	0.280	24.9	9.5	1-7 Days	sedentary	11
<i>Galerida cristata</i>	31.2	1.112	21.3	41.7	45.3	11.8	0.729	24.3	14.1	7+ Days	sedentary	29
<i>Alauda arvensis</i>	31.7	2.156	52.9	6.3	729.8	67.0	0.201	9.4	6.2	7+ Days	sedentary	30
<i>Cardinalis sinuatus</i>	32	1.067	32.2	-110.9	220	12.6	0.870	18.4	15.3	7+ Days	sedentary	13
<i>Saltator orenocensis</i>	32.7	0.935	8.6	-67.6	665.7	113.9	0.906	27.0	7.6	1-7 Days	sedentary	4
<i>Zonotrichia querula</i>	33.3	1.343	39.0	-95.2	678.2	76.5	0.439	13.3	12.1	7+ Days	migratory	39
<i>Copsychus saularis</i>	33.5	0.690	3.1	101.7	1115.3	202.2	0.280	24.9	9.5	Overnight	sedentary	11
<i>Merops viridis</i>	33.81	0.886	3.1	101.7	1115.3	202.2	0.280	24.9	9.5	Overnight	sedentary	6
<i>Colius colius</i>	35.1	0.529	-33.1	22.3	397.3	40.9	0.169	15.2	15.2	7+ Days	sedentary	23
<i>Alaemon alaudipes</i>	37.7	1.274	22.3	41.8	32.4	7.6	1.030	25.5	14.0	7+ Days	sedentary	30
<i>Cardinalis cardinalis</i>	41.3	1.356	32.2	-110.9	220	12.6	0.870	18.4	15.3	7+ Days	sedentary	13
<i>Columbina inca</i>	42	0.777	32.2	-110.9	220	12.6	0.870	18.4	15.3	7+ Days	sedentary	20
<i>Xiphorhynchus guttatus</i>	45.2	1.332	9.0	-79.7	829.7	244.2	0.563	26.0	6.5	Overnight	sedentary	31
<i>Saltator coerulescens</i>	47	1.166	8.6	-67.6	665.7	113.9	0.906	27.0	7.6	1-7 Days	sedentary	4
<i>Neophema petrophila</i>	48.4	1.895	-30.3	115.0	492.2	52.8	0.909	18.4	12.8	7+ Days	sedentary	37
<i>Melanocorypha calandra</i>	50.6	1.710	33.0	51.0	110.1	17.7	0.996	13.3	15.4	7+ Days	sedentary	29
<i>Colius striatus</i>	51.2	0.709	-29.6	30.4	710.9	67.8	0.654	17.0	11.9	7+ Days	sedentary	22
<i>Melanerpes formicivorus</i>	73.1	2.232	36.4	-121.6	495.3	35.6	1.010	13.1	10.0	7+ Days	sedentary	33
<i>Sturnus vulgaris</i>	85	3.719	49.3	-123.1	538.5	99.1	0.541	8.7	7.8	7+ Days	sedentary	15
<i>Geophaps smithii</i>	89	1.261	-21.0	118.0	195.2	27.8	1.008	26.6	13.9	7+ Days	sedentary	38
<i>Coturnix pectoralis</i>	95.8	1.916	-35.3	139.0	461.1	40.9	0.355	15.2	12.5	7+ Days	nomadic	28
<i>Sturnus cristatellus</i>	109.365	3.608	49.3	-123.1	538.5	99.1	0.541	8.7	7.8	7+ Days	sedentary	15
<i>Leptoptila verreauxi</i>	131	2.648	9.0	-79.7	829.7	244.2	0.563	26.0	6.5	Overnight	sedentary	31

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<i>Platycercus zonarius</i>	131.8	2.367	-29.5	115.8	428.1	44.7	0.837	18.9	14.6	7+ Days	sedentary	37
<i>Trichoglossus haematodus</i>	137.1	3.567	-31.9	115.8	532.8	50.4	0.915	18.1	10.3	7+ Days	nomadic	37
<i>Pica nuttalli</i>	151.9	4.385	38.5	-121.7	440.2	42.0	0.843	15.0	13.4	7+ Days	sedentary	12
<i>Pica pica</i>	158.9	3.567	42.9	-112.4	317.1	22.7	0.416	6.6	14.4	7+ Days	sedentary	12
<i>Calidris tenuirostris</i>	198.2	6.005	-18.0	122.4	279.8	48.3	1.306	26.6	11.1	Overnight	migratory	2
<i>Eolophus roseicapillus</i>	268.7	4.478	-29.5	115.8	428.1	44.7	0.837	18.9	14.6	7+ Days	sedentary	37
<i>Dacelo novaeguinae</i>	336	3.348	-42.8	147.5	624.4	61.1	0.133	11.0	8.6	7+ Days	sedentary	7
<i>Podargus strigoides</i>	341	3.353	-42.0	147.0	676.2	51.6	0.169	11.1	11.9	7+ Days	sedentary	3
<i>Pterocles orientalis</i>	386.4	5.813	30.9	34.8	96.2	16.8	1.050	19.3	11.6	7+ Days	nomadic	14
<i>Calyptorhynchus banksii</i>	535.5	8.867	-29.5	115.8	428.1	44.7	0.837	18.9	14.6	7+ Days	sedentary	37
<i>Cacatua tenuirostris</i>	549.9	9.465	-29.5	115.8	428.1	44.7	0.837	18.9	14.6	7+ Days	sedentary	37
<i>Cacatua galerita</i>	776.1	10.215	-31.9	115.8	532.8	50.4	0.915	18.1	10.3	7+ Days	sedentary	37

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