

Supporting Appendix S4. The complete dataset used in our study.

N	sequential number of independent samples in the analysis
Family	taxonomic family for sister-clades
Genus	taxonomic genus for sister-clades
Clade.A	the taxa within the first of the two sister-clades; includes only the species or subspecies that fall within the latitudinal region of interest (high or low latitudes - see Latitude below)
Clade.B	the taxa within the second of the two sister-clades; includes only the species or subspecies that fall within the latitudinal area of interest (high or low latitudes - see Latitude below)
Latitude	high or low, based on the species distributions (centroid latitude > 40 degrees = high; centroid latitude between tropics of Cancer and Capricorn = low)
Sympatry	the proportion of the smaller range clade that falls within the distribution of the larger range clade (breeding ranges only); includes only the species that fall within the latitudinal area of interest (high or low latitudes - see Latitude above)
TMRCA	estimated time to most recent common ancestor measured in number of lineages born from a parent lineage per substitution per site
p.Distance	mean raw nucleotide distance (p distance) between members of the two clades, measured using the program MEGA 4
p.Distance.SE	standard error of the mean nucleotide distance (p distance) between members of the two clades, measured using the program MEGA 4 (bootstrap, 1000 replicates)
mtDNA.Genes	genes used to estimate genetic distance
Base.Pairs	number of base pairs used to estimate genetic distance
Rank	mean ranking of color pattern differences across 7 observers, ranging from 0 (similar) to 1 (different); ranked within families; standardized to between 0 and 1
Rating	mean rating of color pattern differences across 7 observers, rated from 1 (similar) to 7 (different); rated within families, standardized within observers within each family (mean = 0, SD = 1.0)

Notes:

data sets include only clades with p distance values between 0 - 0.06

subspecies/allopatric populations are included

incl = lineage includes a taxon whose phylogenetic placement is based on other evidence (e.g., morphometrics, other genes) and for which genetic data for the gene(s) of interest are not available

excluding = lineage excludes a taxon that is sometimes included within a species but is phylogenetically independent based on sequence evidence

N	Family	Genus	Clade.A	Clade.B	Latitude	Sympatry	TMRCA	p.Distance	p.Distance.SE	mtDNA.Genes	Base.Pairs	Rank	Rating
1	Picidae	<i>Picoides</i>	<i>villosus</i>		high	0.842	2.362	0.04157	0.00489	cyt b, COI	1386	0.95238	1.04668
2	Picidae	<i>Sphyrapicus</i>	<i>ruber</i>	<i>nuchalis</i>	high	0.037	0.745	0.00479	0.00136	cyt b, COI	1386	0.65873	-0.11458
3	Picidae	<i>Sphyrapicus</i>	<i>ruber/nuchalis</i>	<i>varius</i>	high	0.007	1.552	0.01907	0.00316	cyt b, COI	1386	0.46825	-0.53583
4	Picidae	<i>Veniliornis</i>	<i>affinis (incl maculifrons)</i>	<i>nigriceps</i>	low	0.018	0.865	0.04731	0.00582	cyt b, COI	1386	0.24802	-0.79732
5	Picidae	<i>Veniliornis</i>	<i>callonotus</i>	<i>dignus</i>	low	0.003	0.493	0.03448	0.00438	cyt b, COI	1386	0.87302	1.09642
6	Picidae	<i>Veniliornis</i>	<i>affinis (incl maculifrons)/nigriceps</i>	<i>callonotus/dignus</i>	low	0.069	1.215	0.04215	0.00371	cyt b, COI	1386	0.64220	0.51961
7	Picidae	<i>Veniliornis</i>	<i>frontalis</i>	<i>passerinus (incl sanguineus)</i>	low	0.064	0.673	0.00655	0.00223	cyt b, COI	1386	0.39484	-0.33031
8	Picidae	<i>Veniliornis</i>	<i>affinis (incl maculifrons)/nigriceps/callonotus/melanoleucos</i>	<i>frontalis/passerinus (incl sanguineus)</i>	low	0.859	1.710	0.04794	0.00424	cyt b, COI	1386	0.50529	0.10588
9	Picidae	<i>Campephilus</i>	<i>melanoleucos</i>	<i>gayaquilensis</i>	low	0.000	0.406	0.04496	0.00561	cyt b, COI	1386	0.08730	-1.39387
10	Picidae	<i>Campephilus</i>	<i>melanoleucos/gayaquilensis</i>	<i>guatemalensis</i>	low	0.000	0.484	0.04937	0.00501	cyt b, COI	1386	0.14087	-1.09983
11	Picidae	<i>Campephilus</i>	<i>melanoleucos/gayaquilensis/guatemalensis</i>	<i>pollens</i>	low	0.392	0.870	0.05264	0.00467	cyt b, COI	1386	0.66402	0.06202
12	Accipitridae	<i>Buteo</i>	<i>lagopus</i>	<i>regalis</i>	high	0.000	0.223	0.00771	0.00365	ND6	519	0.35714	-0.66732
13	Accipitridae	<i>Buteo</i>	<i>lagopus/regalis</i>	<i>jamaicensis</i>	high	0.345	1.077	0.04578	0.00835	ND6	519	0.63571	0.28802
14	Accipitridae	<i>Buteo</i>	<i>lagopus/regalis/jamaicensis</i>	<i>swainsoni</i>	high	1.000	1.096	0.03662	0.00656	ND6	519	0.88095	1.04508
15	Accipitridae	<i>Leucopternis</i>	<i>melanops</i>	<i>kuhli</i>	low	0.052	0.263	0.01927	0.00579	ND6	519	0.28571	-0.64411
16	Accipitridae	<i>Leucopternis</i>	<i>albicollis costaricensis</i>	<i>albicollis ghibsbreghtii</i>	low	0.000	0.244	0.00000	0.00000	ND6	519	0.51429	-0.23221
17	Accipitridae	<i>Leucopternis</i>	<i>albicollis</i>	<i>occidentalis</i>	low	0.000	0.546	0.01354	0.00472	ND6	519	0.32857	-0.58596
18	Accipitridae	<i>Parabuteo</i>	<i>unicinctus harrisi</i>	<i>unicinctus uncinctus</i>	low	0.000	0.424	0.00337	0.00211	ND6	519	0.10000	-1.58169
19	Tyrannidae	<i>Empidonax</i>	<i>alnorum</i>	<i>traillii</i>	high	0.177	0.528	0.04110	0.00772	cyt b, ND2	592	0.14286	-1.31520
20	Tyrannidae	<i>Empidonax</i>	<i>atriceps</i>	<i>fulvifrons</i>	low	0.000	0.480	0.03547	0.00699	cyt b, ND2	592	0.44643	-0.37511
21	Tyrannidae	<i>Empidonax</i>	<i>flavescens flavescens</i>	<i>flavescens salvinii</i>	low	0.000	0.450	0.01098	0.00410	cyt b, ND2	592	0.23214	-1.01495
22	Tyrannidae	<i>Anairetes</i>	<i>nigrocristatus</i>	<i>reguloides</i>	low	0.000	0.230	0.01418	0.00477	cyt b, ND2	592	0.42857	-0.84189
23	Tyrannidae	<i>Anairetes</i>	<i>nigrocristatus/reguloides</i>	<i>agilis (incl agraphia)</i>	low	0.032	0.564	0.05722	0.00942	cyt b, ND2	592	0.81250	0.88679
24	Turdidae	<i>Catharus</i>	<i>fuscescens</i>	<i>minimus</i>	high	0.008	1.223	0.01829	0.00242	cyt b, ND2	1859	0.33333	-0.67750
25	Turdidae	<i>Catharus</i>	<i>bicknelli</i>	<i>fuscescens/minimus</i>	high	1.000	1.592	0.01722	0.00221	cyt b, ND2	1859	0.16369	-1.01609
26	Turdidae	<i>Turdus</i>	<i>serranus</i>	<i>fuscater</i>	low	0.563	0.219	0.03604	0.00403	cyt b, ND2	1859	0.92262	1.74214
27	Turdidae	<i>Turdus</i>	<i>serranus/fuscater</i>	<i>olivater</i>	low	0.315	0.731	0.04626	0.00410	cyt b, ND2	1859	0.86905	1.00576
28	Turdidae	<i>Turdus</i>	<i>maranonicus</i>	<i>ignobilis</i>	low	0.006	0.313	0.00807	0.00228	cyt b, ND2	1859	0.52976	-0.13073
29	Turdidae	<i>Turdus</i>	<i>amaurocholinus</i>	<i>ignobilis/maranonicus</i>	low	0.271	0.659	0.02555	0.00380	cyt b, ND2	1859	0.58333	0.36709
30	Turdidae	<i>Turdus</i>	<i>amaurocholinus/ignobilis/maranonicus</i>	<i>lawrencei</i>	low	0.869	1.179	0.05792	0.00495	cyt b, ND2	1859	0.74802	0.59701
31	Turdidae	<i>Turdus</i>	<i>fumigatus</i>	<i>hauwelli</i>	low	0.013	0.263	0.04362	0.00499	cyt b, ND2	1859	0.33929	-0.74907
32	Turdidae	<i>Turdus</i>	<i>haplochrous</i>	<i>nudigenis (excluding n. maculirostris)</i>	low	0.000	0.293	0.03604	0.00404	cyt b, ND2	1859	0.27976	-0.50953
33	Turdidae	<i>Turdus</i>	<i>grayi</i>	<i>haplochrous/nudigenis (excluding n. maculirostris)</i>	low	0.000	0.532	0.03497	0.00378	cyt b, ND2	1859	0.48512	0.08246
34	Turdidae	<i>Turdus</i>	<i>grayi/haplochrous/nudigenis (excluding n. maculirostris)</i>	<i>nudigenis maculirostris</i>	low	0.000	0.808	0.03281	0.00336	cyt b, ND2	1859	0.25595	-0.96591
35	Turdidae	<i>Turdus</i>	<i>grayi/haplochrous/nudigenis</i>	<i>rufiventris</i>	low	0.012	1.163	0.04102	0.00371	cyt b, ND2	1859	0.65625	0.42914
36	Turdidae	<i>Turdus</i>	<i>infuscatus</i>	<i>nigrescens</i>	low	0.000	0.275	0.05756	0.00479	cyt b, ND2	1859	0.25595	-1.16364
37	Parulidae	<i>Dendroica</i>	<i>occidentalis</i>	<i>townsendi</i>	high	0.158	0.383	0.01249	0.00335	ND2	1041	0.45408	-0.16754
38	Parulidae	<i>Dendroica</i>	<i>occidentalis/townsendi</i>	<i>virens</i>	high	0.000	0.443	0.01297	0.00284	ND2	1041	0.31378	-0.80891
39	Parulidae	<i>Dendroica</i>	<i>petechia</i>	<i>striata</i>	high	0.925	0.617	0.03992	0.00564	ND2	1041	0.98980	2.08190
40	Parulidae	<i>Dendroica</i>	<i>pensylvanica</i>	<i>petechia/striata</i>	high	0.999	0.715	0.04182	0.00512	ND2	1041	0.90689	1.24827
41	Parulidae	<i>Dendroica</i>	<i>coronata coronata</i>	<i>coronata auduboni</i>	high	0.230	0.488	0.00480	0.00207	ND2	1041	0.17857	-0.92587
42	Parulidae	<i>Vermivora</i>	<i>celata</i>	<i>ruficapilla</i>	high	0.542	0.959	0.02161	0.00451	ND2	1041	0.89286	0.93474
43	Parulidae	<i>Vermivora</i>	<i>chrysoptera</i>	<i>pinus</i>	high	0.600	0.730	0.03843	0.00552	ND2	1041	0.88776	0.55387
44	Parulidae	<i>Myioborus</i>	<i>cardonai</i>	<i>castaneocapillus castaneocapillus</i>	low	0.000	1.192	0.03330	0.00545	ND2	1041	0.64796	0.69663
45	Parulidae	<i>Myioborus</i>	<i>albifacies</i>	<i>cardonai/castaneocapillus</i>	low	0.000	1.689	0.05373	0.00654	ND2	1041	0.55230	0.06603
46	Parulidae	<i>Myioborus</i>	<i>melanocephalus ruficoronatus</i>	<i>ornatus</i>	low	0.000	1.576	0.00785	0.00243	ND2	1041	0.64031	-0.03677
47	Parulidae	<i>Myioborus</i>	<i>melanocephalus melanocephalus</i>	<i>melanocephalus ruficoronatus/ornatus</i>	low	0.000	1.837	0.00901	0.00217	ND2	1041	0.38776	-0.46739
48	Parulidae	<i>Myioborus</i>	<i>melanocephalus/ornatus</i>	<i>albifrons</i>	low	0.000	2.630	0.03754	0.00525	ND2	1041	0.38861	-0.32027
49	Parulidae	<i>Myioborus</i>	<i>torquatus</i>	<i>albifrons/melanocephalus/ornatus</i>	low	0.000	2.874	0.05741	0.00641	ND2	1041	0.49554	-0.07577
50	Parulidae	<i>Myioborus</i>	<i>albifacies/cardonai/castaneocapillus/pariae/fl</i>	<i>torquatus/melanocephalus/ornatus/albifrons</i>	low	0.000	3.057	0.05669	0.00456	ND2	1041	0.57429	0.23062
51	Parulidae	<i>Myioborus</i>	<i>miniatus comptus</i>	<i>miniatus ballax</i>	low	0.000	1.975	0.01667	0.00292	ND2	1041	0.10714	-1.40231
52	Parulidae	<i>Myioborus</i>	<i>miniatus comptus/miniatus ballax</i>	<i>miniatus miniatus</i>	low	0.000	2.484	0.05393	0.00647	ND2	1041	0.48980	-0.21874
53	Parulidae	<i>Geothlypis</i>	<i>flavovelata</i>	<i>nelsoni</i>	low	0.000	0.465	0.00384	0.00202	ND2	1041	0.14031	-0.88606
54	Parulidae	<i>Geothlypis</i>	<i>semiflava</i>	<i>speciosa</i>	low	0.000	0.683	0.04995	0.00647	ND2	1041	0.15816	-1.00300
55	Parulidae	<i>Geothlypis</i>	<i>flavovelata/nelsoni</i>	<i>semiflava/speciosa</i>	low	0.005	1.521	0.05139	0.00578	ND2	1041	0.14923	-0.99642
56	Emberizidae	<i>Melospiza</i>	<i>georgiana</i>	<i>lincolnii</i>	high	0.700	0.025	0.04498	0.00745	ND2	667	0.82488	1.08567
57	Emberizidae	<i>Melospiza</i>	<i>melodia</i>	<i>georgiana/lincolnii</i>	high	0.711	0.042	0.05847	0.00772	ND2	667	0.77419	0.93758
58	Emberizidae	<i>Zonotrichia</i>	between all 4 high latitude subspecies of <i>leucop</i>	between all 4 high latitude subspecies of <i>leucop</i>	high	0.055	0.006	0.00144	0.00110	ND2	667	0.13594	-1.17681
59	Emberizidae	<i>Zonotrichia</i>	<i>atricapillus</i>	<i>leucophrys</i>	high	0.887	0.006	0.00115	0.00032	ND2	667	0.64516	0.01537
60	Emberizidae	<i>Zonotrichia</i>	<i>albicollis</i>	<i>leucophrys/atricapilla</i>	high	0.482	0.023	0.02513	0.00566	ND2	667	0.56452	0.00212
61	Emberizidae	<i>Zonotrichia</i>	<i>querula</i>	<i>albicollis/leucophrys/atricapilla</i>	high	0.851	0.032	0.04517	0.00675	ND2	667	0.65131	0.65383
62	Emberizidae	<i>Passerella</i>	<i>fuliginosa</i>	<i>schistacea</i>	high	0.000	0.011	0.01342	0.00352	ND2	667	0.84793	1.09897
63	Emberizidae	<i>Passerella</i>	<i>fuliginosa/schistacea</i>	<i>iliaca</i>	high	0.000	0.014	0.01841	0.00410	ND2	667	0.78571	1.01320
64	Emberizidae	<i>Chlorospingus</i>	<i>o.phaeocephalus</i>	<i>semifuscus</i>	low	0.000	0.031	0.03349	0.00679	ND2	667	0.65899	0.23089
65	Emberizidae	<i>Chlorospingus</i>	<i>o.phaeocephalus/semifuscus/inornatus</i>	<i>tacarcunae</i>	low	0.000	0.032	0.04527	0.00729	ND2	667	0.34793	-0.59559

66	Emberizidae	<i>Chlorospingus</i>	<i>o.phaeocephalus/semifuscus/normatus/tacar o. cinereocephalus</i>	low	0.000	0.035	0.04626	0.00680	ND2	667	0.51152	0.31408
67	Emberizidae	<i>Chlorospingus</i>	<i>o.phaeocephalus/semifuscus/normatus/tacar o. jacqueti</i>	low	0.000	0.041	0.04811	0.00603	ND2	667	0.49770	-0.32616
68	Fringillidae	<i>Carduelis</i>	<i>flammea hornemanni</i>	high	0.576	0.087	0.00325	0.00129	cyt b	924	0.24490	-1.21157
69	Fringillidae	<i>Carduelis</i>	<i>pinus tristis</i>	high	0.825	0.308	0.04437	0.00640	cyt b	924	0.99490	1.81945
70	Fringillidae	<i>Carduelis</i>	<i>xanthogastra olivacea</i>	low	0.209	0.167	0.01623	0.00425	cyt b	924	0.61224	0.66786
71	Fringillidae	<i>Carduelis</i>	<i>magellanicus (incl siemiradskii) yarrellii</i>	low	0.023	0.190	0.01139	0.00283	cyt b	924	0.44260	-0.58183
72	Fringillidae	<i>Carduelis</i>	<i>crassirostris magellanicus(incl siemiradskii)/yarrellii</i>	low	0.365	0.195	0.00975	0.00247	cyt b	924	0.25765	-0.91534
73	Fringillidae	<i>Carduelis</i>	<i>crassirostris/magellanicus(incl siemiradskii)/y spinescens</i>	low	0.220	0.196	0.01110	0.00273	cyt b	924	0.35268	-0.77013
74	Fringillidae	<i>Carduelis</i>	<i>atrata crassirostris/magellanicus(incl siemiradskii)/yarrellii</i>	low	0.574	0.196	0.00975	0.00235	cyt b	924	0.77704	1.04472
75	Fringillidae	<i>Carduelis</i>	<i>xanthogastra/olivacea atrata/crassirostris/magellanicus(incl siemiradskii)</i>	low	0.592	0.211	0.01426	0.00262	cyt b	924	0.46620	-0.06275
76	Fringillidae	<i>Carduelis</i>	<i>cucullata xanthogastra/olivacea/atrata/crassirostris/magellanicus</i>	low	0.322	0.211	0.01841	0.00366	cyt b	924	0.72003	0.73453
77	Fringillidae	<i>Carduelis</i>	<i>cucullata/xanthogastra/olivacea/atrata/crassii notata</i>	low	0.000	0.237	0.03200	0.00548	cyt b	924	0.42602	-0.31133
78	Fringillidae	<i>Carduelis</i>	<i>cucullata/xanthogastra/olivacea/atrata/crassii atriceps</i>	low	0.897	0.287	0.04655	0.00651	cyt b	924	0.45051	-0.18304