

Supplementary material

Appendix 1

Table A1. Primers used to amplify short overlapping DNA fragments from foot pad samples.

Myo-Fluv028F	ATCTGGAGGTATGGAAAAGAGCA
Myo-Fluv227R	TCAGACTGTGTGTGGTGTGGAA
Myo-Fluv160F	TCAAGATCAAGGTCTCTGTGTACA
Myo-Fluv358R	AATGGATCCTCTAGGGCTTGC
Myo-Fluv324F	ATTACATAAGACCTGTGAGTGGCT
Myo-Fluv545R	TGAAGTTTAGCATGCAAGGAACCT
Myo-Fluv519F	CTCAGTGTGCGGAGCTAGGAATA
ODC-Fluv189R	ATATCAGTTGCTACTTGGCAAATTA
ODC-Fluv155F	TAAGGACAGAGATGCCTTTACAT
ODC-Fluv335R	ACAACAGTTGAGCAGTATTTCCAG
ODC-Fluv320F	TGTGTTTGATATGGGAGTAAGTCT
ODC-Fluv508R	TAGTCACTTGAGTATGAGCTGCCA
ODC-Fluv477F	CATGATGGCTTACTTTGACCAGTTT
TGF-Fluv229R	TGGGAATCATCCCAGATGGAACCT
TGF-Fluv207F	TGGCAGATGAGGGAGGTTGT
TGF-Fluv409R	CTGTAAGTCAAATTGGATGCCTAGA
TGF-Fluv376F	GACTAAGTGCTACAGGGAAACCT
ND2-Fluv232R	TATCTCATTGGCCAGTAAATCATGC
ND2-Cont203F	TTGATCCAAGCAACTGCCTCTAC
ND2-Xolm206F	GTCCAAGCAACCGCCTCCACATT
ND2-Cont481R	TATTCAGCCCCCTAGAGCTGCAGA
ND2-Xolm481R	TATTCATCCTCCTAAAGCTGCAGA
ND2-Cont449F	TCTTTCTAACCTCCCCCTCACTCAA
ND2-Xolm449F	TCTTCTTAACCTCCTCCTCACTCAA
ND2-Xolm674R	TGCGGTTATTAGGGTTGATAGTTTTA
ND2-Con685R	TTAGATCATGCAGCTATTAAGGT
ND2-Fluv638F	TTCTACCTCTATTCTTTAACAACAGC
ND2-Fluv889R	AGGGTAATTGTTGCACAGTAGGC
ND2-Fluv838F	AAGCAAGAACTTACAACACTACAGCAA
ND2-Fluv232R	TATCTCATTGGCCAGTAAATCATGC
ND2-Cont203F	TTGATCCAAGCAACTGCCTCTAC
ND2-Xolm206F	GTCCAAGCAACCGCCTCCACATT
ND2-Cont481R	TATTCAGCCCCCTAGAGCTGCAGA
ND2-Xolm481R	TATTCATCCTCCTAAAGCTGCAGA
ND2-Cont449F	TCTTTCTAACCTCCCCCTCACTCAA
ND2-Xolm449F	TCTTCTTAACCTCCTCCTCACTCAA
ND2-Xolm674R	TGCGGTTATTAGGGTTGATAGTTTTA
ND2-Con685R	TTAGATCATGCAGCTATTAAGGT
ND2-Fluv638F	TTCTACCTCTATTCTTTAACAACAGC
ND2-Fluv889R	AGGGTAATTGTTGCACAGTAGGC
ND2-Fluv838F	AAGCAAGAACTTACAACACTACAGCAA

Table A2. Samples used in this study and associated GenBank numbers. All new sequences generated for this study is indicated by bold font. As outgroups we used the following species: *Ampelioides tschudii*, *Myiobius villosus*, *Laniocera hypopyrra*, *Pachyramphus castaneus*, *Pipra fasciicauda*, *Piprites chloris*, *Piprites pileatus*, *Platyrrinchus mystaceus*, *Todirostrum cinereum*, *Mionectes rufiventris*, *Zimmerius chrysops*, *Anairetes parulus*, *Elaenia flavogaster*, *Myiopagis caniceps*, *Myiophobus pulcher*, *Myiotriccus ornatus*, *Hirundinea ferruginea*, *Pyrrhomyias cinnamomeus*, *Ramphotrigon megacephalum*, *Attila torridus*, *Empidonomus varius*, *Myiarchus tyrannulus* and *Muscigralla brevicauda*.

Family	Subfamily	Scientific name	Sample id	Provenance	g3p	myo	odc	tgf	cytb	nd2
COTINGIDAE	Pipreolinae	<i>Ampelioides tschudii</i>	ZMUC 127031	Ecuador, Guayas	DQ470516	DQ470543	EU231841	MG722378	DQ470491	MG722513
PIPRIDAE	Piprinae	<i>Pipra fasciicauda</i>	NRM 947271	Paraguay, Amambay	AY336583	AY065787	DQ435495	MG722379	AF453817	MG722514
TITYRIDAE	Laniisominae	<i>Laniocera hypopyrra</i>	ZMUC 125879	Braxil, Mato Grosso	DQ470527	DQ470554	EU231849	MG722380	EF458572	DQ363876
TITYRIDAE	Tityrinae	<i>Pachyramphus castaneus</i>	NRM 976715	Paraguay, Concepción	EU231652	EU231750	EU231852	MG722381	MG722127	DQ363937
ONYCHORHYNCHIDAE		<i>Myiobius villosus</i>	ZMUC 126095	Ecuador, Esmeraldas	EU231654	EU231752	EU231854	MG722382	MG722128	MG722515
PIPRITIDAE		<i>Piprites chloris</i>	ZMUC 127972	Ecuador, Morona-Santiago	EU231656	EU231754	EU231856	MG722383	MG722129	MG722516
PIPRITIDAE		<i>Piprites pileatus</i>	ZMUC 128817	SE Brazil	DQ435472	DQ435524	DQ435496	MG722384	DQ435457	MG722517
PLATYRINCHIDAE		<i>Platyrrinchus mystaceus</i>	NRM 976724	Paraguay, Concepción	DQ435473	DQ435525	DQ435497	MG722385	DQ435458	MG722518
RHYNCHOCYCLIDAE	Pipromorphinae	<i>Mionectes rufiventris</i>	NRM 966944	Paraguay, Paraguari	EU231662	EU231760	EU231862	MG722386	MG722130	DQ294555
RHYNCHOCYCLIDAE	Todirostrinae	<i>Todirostrum cinereum</i>	NRM 947036	Paraguay, Alto Paraguay	AY336575	AY338740	DQ435506	MG722387	AF453809	EF501890
TYRANNIDAE	Hirundineinae	<i>Hirundinea ferruginea</i>	ZMUC 125257	Cochabamba, Bolivia	EU231692	EU231790	EU231893	MG722395	MG722136	MG722526
TYRANNIDAE	Hirundineinae	<i>Myiotriccus ornatus</i>	ZMUC 125759	Ecuador, Napo	EU231691	EU231789	EU231892	MG722392	MG722133	MG722523
TYRANNIDAE	Hirundineinae	<i>Nepholomyias pulcher</i>	ZMUC 125787	Ecuador, Sucumbios	EU231694	EU231792	EU231895	MG722393	MG722134	MG722524
TYRANNIDAE	Hirundineinae	<i>Pyrrhomyias cinnamomeus</i>	ZMUC 125477	Ecuador, Loja	EU231693	EU231791	EU231894	MG722394	MG722135	MG722525
TYRANNIDAE	Elaeniinae	<i>Zimmerius chrysops</i>	ZMUC 125511	Ecuador, Zamora-Chinchipe	EU231683	EU231781	EU231884	MG722390	MG722131	MG722521
TYRANNIDAE	Elaeniinae	<i>Elaenia flavogaster</i>	NRM 966970	Paraguay, Concepción	DQ435464	AY064254	DQ435480	MG722388	AF453807	MG722519
TYRANNIDAE	Elaeniinae	<i>Myiopagis caniceps</i>	NRM 976683	Paraguay, Amambay	DQ435475	DQ435527	EU231871	MG722389	DQ435460	MG722520
TYRANNIDAE	Elaeniinae	<i>Anairetes parulus</i>	ZMUC 125198	Peru, Apurimac	EU231678	EU231776	EU231879	MG722391	MG722132	MG722522
TYRANNIDAE	Muscigrallinae	<i>Muscigralla brevicauda</i>	ZMUC 125316	Peru, Lambayeque/Piura	EU231712	EU231810	EU231913	MG722400	MG722139	MG722531
TYRANNIDAE	Tyranninae	<i>Attila torridus</i>	ZMUC 125220	Ecuador, Loja	EU231698	EU231796	EU231899	MG722397	MG722137	MG722528
TYRANNIDAE	Tyranninae	<i>Ramphotrigon megacephalum</i>	ZMUC 127218	Paraguay, Alto Paraná	EU231700	EU231798	EU231901	MG722396	DQ294524	MG722527
TYRANNIDAE	Tyranninae	<i>Myiarchus tyrannulus</i>	NRM 937173	Paraguay, Presidente Hayes	DQ435469	DQ435521	DQ435489	MG722398	AF453812	MG722529

TYRANNIDAE	Tyranninae	<i>Empidonomus varius</i>	NRM 956628	Paraguay, Caazapa	EU231711	EU231809	EU231912	MG722399	MG722138	MG722530
TYRANNIDAE	Fluvicolinae	<i>Myiophobus flavicans</i>	ZMUC 125347	Ecuador, Carchi	EU231714	EU231812	EU231915	MG722401	MG722140	MG722532
TYRANNIDAE	Fluvicolinae	<i>Myiophobus inornatus</i>								
TYRANNIDAE	Fluvicolinae	<i>Myiophobus phoenicomitra</i>	ZMUC 127836	Ecuador, Morona-Santiago	EU231713	EU231811	EU231914	MG722402	MG722141	MG722533
TYRANNIDAE	Fluvicolinae	<i>Myiophobus roraimae roraimae</i>	USNM 626955	Guyana, Mount Roraima	MG722062	MG722310	MG722242	MG722403	MG722142	MG722534
TYRANNIDAE	Fluvicolinae	<i>Myiophobus roraimae rufipennis</i>	ZMUC 128167	Peru, Loreto	KC157435	KC157474	KC157537	MG722404	MG722143	MG722535
TYRANNIDAE	Fluvicolinae	<i>Silvicultrix diadema</i>	ZMUC 125782	Ecuador, Imbabura/Esmeraldas	EU231716	EU231814	EU231917	MG722405	MG722144	MG722536
TYRANNIDAE	Fluvicolinae	<i>Silvicultrix jelskii</i>	ZMUC 125494	Ecuador, Loja	MG722064	MG722312	MG722244	MG722407	MG722146	MG722538
TYRANNIDAE	Fluvicolinae	<i>Silvicultrix frontalis</i>	ZMUC 125903	Ecuador, Carchi	MG722063	MG722311	MG722243	MG722406	MG722145	MG722537
TYRANNIDAE	Fluvicolinae	<i>Silvicultrix pulchella</i>	ZMUC 132224	Unknown	KC157439	KC157478	KC157541	MG722408	MG722147	MG722539
TYRANNIDAE	Fluvicolinae	<i>Silvicultrix spodionota</i>								
TYRANNIDAE	Fluvicolinae	<i>Colorhamphus parvirostris</i>	NRM 570023	Chile, Los Rios	KC157430	KC157469	KC157532	MG722409	MG722148	MG722540
TYRANNIDAE	Fluvicolinae	<i>Tumbezia salvini</i>	ZMUC 125508	Peru, Lambayeque/Piura	EU231718	EU231816	EU231919	MG722412	MG722151	MG722543
TYRANNIDAE	Fluvicolinae	<i>Ochthoeca cinnamomeiventris</i>	ZMUC 134976	Colombia, Antioquia	KC157437	KC157476	KC157539	MG722410	MG722149	MG722541
TYRANNIDAE	Fluvicolinae	<i>Ochthoeca fumicolor</i>	ZMUC 126593	Peru, Cusco	MG722065	MG722313	MG722245	MG722413	MG722152	MG722544
TYRANNIDAE	Fluvicolinae	<i>Ochthoeca leucophrys</i>	ZMUC 126302	Ecuador, Loja	MG722067	MG722315	MG722247	MG722415	MG722154	MG722546
TYRANNIDAE	Fluvicolinae	<i>Ochthoeca nigrita</i>								
TYRANNIDAE	Fluvicolinae	<i>Ochthoeca oenanthoides</i>	ZMUC 126270	Bolivia, Potosí	JF970152	JF970163	JF970174	MG722416	MG722155	MG722547
TYRANNIDAE	Fluvicolinae	<i>Ochthoeca piurae</i>	AMNH SKIN 175347	Peru, Piura	MG722068	MG722316	MG722248	MG722417	MG722156	MG722548
TYRANNIDAE	Fluvicolinae	<i>Ochthoeca rufipectoralis</i>	ZMUC 125923	Ecuador, Carchi	MG722066	MG722314	MG722246	MG722414	MG722153	MG722545
TYRANNIDAE	Fluvicolinae	<i>Ochthoeca thoracica</i>	ZMUC 125360	Peru, Cuzco	EU231717	EU231815	EU231918	MG722411	MG722150	MG722542
TYRANNIDAE	Fluvicolinae	<i>Sublegatus arenarum</i>	USNM 625646	Guyana, Abary River	MG722069	MG722317	MG722249	MG722418	MG722157	MG722549
TYRANNIDAE	Fluvicolinae	<i>Sublegatus modestus</i>	NRM 996668	Paraguay, Alto Paraguay	EU231723	EU231821	EU231924	MG722419	MG722158	MG722550
TYRANNIDAE	Fluvicolinae	<i>Sublegatus obscurior</i>	USNM 625645	Guyana, Upper Essequibo River	MG722070	MG722318	MG722250	MG722420	MG722159	MG722551
TYRANNIDAE	Fluvicolinae	<i>Colonia colonus</i>	NRM 976648	Paraguay, Amambay	EU231719	EU231817	EU231920	MG722421	MG722160	MG722552
TYRANNIDAE	Fluvicolinae	<i>Pyrocephalus rubinus</i>	NRM 965730	Paraguay, Alto Paraguay	EU231720	EU231818	EU231921	MG722425	MG722163	MG722556
TYRANNIDAE	Fluvicolinae	<i>Fluvicola albiventer</i>	NRM 956714	Paraguay, Alto Paraguay	DQ435465	DQ435517	DQ435481	MG722423	AF453810	MG722554
TYRANNIDAE	Fluvicolinae	<i>Fluvicola nengeta</i>	ZMUC 125582	Brazil, Bahia	MG722071	MG722319	MG722251	MG722424	MG722162	MG722555

TYRANNIDAE	Fluvicolinae	<i>Fluvicola pica</i>								
TYRANNIDAE	Fluvicolinae	<i>Arundinicola leucocephala</i>	NRM 947198	Paraguay, Alto Paraguay	EU231721	EU231819	EU231922	MG722422	MG722161	MG722553
TYRANNIDAE	Fluvicolinae	<i>Alectrurus risora</i>	NRM 947227	Paraguay, Presidente Hayes	EU231722	EU231820	EU231923	MG722429	MG722166	MG722560
TYRANNIDAE	Fluvicolinae	<i>Alectrurus tricolor</i>								
TYRANNIDAE	Fluvicolinae	<i>Gubernetes yetapa</i>	NRM 976700	Paraguay, Concepción	AY336578	AY338739	DQ435483	MG722426	AF453811	MG722557
TYRANNIDAE	Fluvicolinae	<i>Muscipira vetula</i>	AMNH SKIN 318937	Brazil, Paraná	MG722072	MG722320	–	MG722427	MG722164	MG722558
TYRANNIDAE	Fluvicolinae	<i>Muscipira vetula</i>	NRM 570022	Unknown	–	–	MG722252	–	–	–
TYRANNIDAE	Fluvicolinae	<i>Heteroxolmis dominicanus</i>	USNM 630343	Uruguay, Rocha	MG722073	MG722321	MG722253	MG722428	MG722165	MG722559
TYRANNIDAE	Fluvicolinae	<i>Myiophobus cryptoxanthus</i>	ZMUC 127826	Ecuador, Morona-Santiago	EU231724	EU231822	EU231925	MG722430	MG722167	MG722561
TYRANNIDAE	Fluvicolinae	<i>Myiophobus fasciatus</i>	NRM 956696	Paraguay, Alto Paraguay	EU231725	EU231823	EU231926	MG722431	MG722168	MG722562
TYRANNIDAE	Fluvicolinae	<i>Ochthornis littoralis</i>	USNM 587798	Guyana, Upper Essequibo River	JF970153	JF970164	JF970175	MG722432	MG722169	MG722563
TYRANNIDAE	Fluvicolinae	<i>Cnemotriccus fuscatus</i>	NRM 966767	Paraguay, Boquerón	EU231727	EU231825	EU231928	MG722433	AF447622	MG722564
TYRANNIDAE	Fluvicolinae	<i>Lathrotriccus eulerei</i>	NRM 967011	Paraguay, Concepción	EU231726	EU231824	EU231927	MG722436	MG722171	MG722566
TYRANNIDAE	Fluvicolinae	<i>Lathrotriccus griseipectus</i>	ZMUC 125977	Ecuador, Manabí	MG722075	MG722324	MG722256	MG722437	MG722172	MG722567
TYRANNIDAE	Fluvicolinae	<i>Aphanotriccus audax</i>	AMNH SKIN 292427	Panama		MG722322	MG722254	MG722434	AF447621	AF447648
TYRANNIDAE	Fluvicolinae	<i>Aphanotriccus capitalis</i>	UWBM 55990	Nicaragua	MG722074	MG722323	MG722255	MG722435	MG722170	MG722565
TYRANNIDAE	Fluvicolinae	<i>Xenotriccus callizonus</i>	AMNH DOT15707	Mexico, Chiapas	MG722076	MG722325	MG722257	MG722438	MG722173	MG722568
TYRANNIDAE	Fluvicolinae	<i>Xenotriccus mexicanus</i>	AMNH SKIN 766573	Mexico, Oaxaca	MG722077	MG722326	MG722258	MG722439	MG722174	MG722569
TYRANNIDAE	Fluvicolinae	<i>Empidonax affinis</i>	UWBM 82897	Mexico, Guerrero	MG722087	MG722336	MG722268	MG722451	AY143182	MG722579
TYRANNIDAE	Fluvicolinae	<i>Empidonax albigularis</i>	GB						AY143184	AY143211
TYRANNIDAE	Fluvicolinae	<i>Empidonax alorum</i>	ZMUC 125779	Ecuador, Napo	EU231730	EU231828	EU231931	MG722444	MG722179	MG722574
TYRANNIDAE	Fluvicolinae	<i>Empidonax atriceps</i>	NRM 571663	Costa Rica, Cartago	MG722083	MG722332	MG722264	MG722446	MG722181	AY143217
TYRANNIDAE	Fluvicolinae	<i>Empidonax difficilis</i>	GB						AF447598	AF447625
TYRANNIDAE	Fluvicolinae	<i>Empidonax flavescens</i>	UWBM 56112	Nicaragua	MG722079	MG722328	MG722260	MG722441	MG722176	MG722571
TYRANNIDAE	Fluvicolinae	<i>Empidonax flaviventris</i>	UWBM 84784	USA, Louisiana	MG722078	MG722327	MG722259	MG722440	MG722175	MG722570
TYRANNIDAE	Fluvicolinae	<i>Empidonax fulvifrons</i>	NRM 571662	Mexico, Chihuahua	MG722084	MG722333	MG722265	MG722447	AY143193	AY143220
TYRANNIDAE	Fluvicolinae	<i>Empidonax hammondii</i>	USNM 621146	USA, Washington	MG722086	MG722335	MG722267	MG722450	AY143194	MG722578
TYRANNIDAE	Fluvicolinae	<i>Empidonax minimus</i>	UWBM 80643	USA, North Dakota	MG722085	MG722334	MG722266	MG722449	DQ294500	MG722577

TYRANNIDAE	Fluvicolinae	<i>Empidonax oberholseri</i>	UWBM 59072	USA, Washington	MG722088	MG722337	MG722269	MG722452	AY143199	MG722580
TYRANNIDAE	Fluvicolinae	<i>Empidonax occidentalis</i>	UWBM 77624	USA, Arizona	MG722080	MG722329	MG722261	MG722442	MG722177	MG722572
TYRANNIDAE	Fluvicolinae	<i>Empidonax traillii</i>	UWBM 73093	USA, Washington	MG722082	MG722331	MG722263	MG722445	MG722180	MG722575
TYRANNIDAE	Fluvicolinae	<i>Empidonax virescens</i>	ZMUC 125929	Ecuador, Esmeraldas	MG722081	MG722330	MG722262	MG722443	MG722178	MG722573
TYRANNIDAE	Fluvicolinae	<i>Empidonax wrightii</i>	UWBM 66178	USA, Oregon	KC157432	KC157471	KC157534	MG722448	MG722182	MG722576
TYRANNIDAE	Fluvicolinae	<i>Sayornis nigricans</i>	ZMUC 125483	Ecuador, Zamora-Chinchipec	EU231728	EU231826	EU231929	MG722454	MG722184	MG722582
TYRANNIDAE	Fluvicolinae	<i>Sayornis phoebe</i>	USNM 633911	USA, Virginia	MG722089	MG722339	MG722270	MG722455	MG722185	MG722583
TYRANNIDAE	Fluvicolinae	<i>Sayornis saya</i>	UWBM 85972	USA, Washington		MG722338		MG722453	MG722183	MG722581
TYRANNIDAE	Fluvicolinae	<i>Mitrephanes olivaceus</i>	FMNH #474294	Peru, Amazonas	MG722090	MG722340	MG722271	MG722456	MG722186	MG722584
TYRANNIDAE	Fluvicolinae	<i>Mitrephanes phaeocercus</i>	ZMUC 126161	Ecuador, Esmeraldas	EU231729	EU231827	EU231930	MG722457	MG722187	MG722585
TYRANNIDAE	Fluvicolinae	<i>Contopus albogularis</i>								
TYRANNIDAE	Fluvicolinae	<i>Contopus caribaeus</i>	NRM 570020	Cuba, Guantanamo	MG722101	MG722351	MG722283	MG722470	MG722200	MG722598
TYRANNIDAE	Fluvicolinae	<i>Contopus cinereus</i>	NRM 967010	Paraguay, Concepcion	MG722098	MG722348	MG722280	MG722467	MG722197	MG722595
TYRANNIDAE	Fluvicolinae	<i>Contopus cinereus</i>	USNM 626009	Guyana, Rupununi Savannah	MG722095	MG722345	MG722277	MG722464	MG722194	MG722592
TYRANNIDAE	Fluvicolinae	<i>Contopus cooperi</i>	ZMUC 125228	Ecuador, Guayas	MG722091	MG722341	MG722272	MG722458	MG722188	MG722586
TYRANNIDAE	Fluvicolinae	<i>Contopus fumigatus</i>	ZMUC 128832	Ecuador, Cotopaxi	KC157431	KC157470	KC157533	MG722460	MG722190	MG722588
TYRANNIDAE	Fluvicolinae	<i>Contopus hispaniolensis</i>	NRM 570019	Dominican Republic, Santo Domingo	MG722102	MG722352	MG722284	MG722471	MG722201	MG722599
TYRANNIDAE	Fluvicolinae	<i>Contopus latirostris</i>								
TYRANNIDAE	Fluvicolinae	<i>Contopus lugubris</i>	AMNH SKIN 391150	Costa Rica			MG722274	MG722461	MG722191	MG722589
TYRANNIDAE	Fluvicolinae	<i>Contopus nigrescens</i>	ZMUC 126887	Ecuador, Pastaza	MG722100	MG722350	MG722282	MG722469	MG722199	MG722597
TYRANNIDAE	Fluvicolinae	<i>Contopus nigrescens</i>	USNM 616521	Guyana, Acari Mountains	MG722099	MG722349	MG722281	MG722468	MG722198	MG722596
TYRANNIDAE	Fluvicolinae	<i>Contopus ochraceus</i>	AMNH SKIN 811844	Costa Rica	MG722092	MG722342	MG722273	MG722459	MG722189	MG722587
TYRANNIDAE	Fluvicolinae	<i>Contopus pallidus</i>								
TYRANNIDAE	Fluvicolinae	<i>Contopus pertinax</i>	FMNH #394281	Mexico, Oaxaca	MG722093	MG722343	MG722275	MG722462	MG722192	MG722590
TYRANNIDAE	Fluvicolinae	<i>Contopus sordidulus</i>	ZMUC 127969	Ecuador, Morona-Santiago	MG722097	MG722347	MG722279	MG722466	MG722196	MG722594
TYRANNIDAE	Fluvicolinae	<i>Contopus sordidulus</i>	UWBM 61800	USA, Washington	MG722096	MG722346	MG722278	MG722465	MG722195	MG722593
TYRANNIDAE	Fluvicolinae	<i>Contopus virens</i>	UWBM 74094	USA, Minnesota	MG722094	MG722344	MG722276	MG722463	MG722193	MG722591
TYRANNIDAE	Fluvicolinae	<i>Satrapa icterophrys</i>	NRM 996681	Paraguay, Alto Paraguay	EU231734	EU231832	EU231935	MG722472	MG722202	MG722600

TYRANNIDAE	Fluvicolinae	<i>Lessonia oreas</i>	GenBank		JQ288266			JQ288298		JQ288140
TYRANNIDAE	Fluvicolinae	<i>Lessonia rufa</i>	ZMUC 131858	Argentina, La Plata	EU231733	EU231831	EU231934	MG722473	MG722203	MG722601
TYRANNIDAE	Fluvicolinae	<i>Hymenops perspicillatus</i>	ZMUC 131855	Argentina, La Plata	EU231732	EU231830	EU231933	MG722474	MG722204	MG722602
TYRANNIDAE	Fluvicolinae	<i>Knipolegus aterrimus</i>	ZMUC 126237	Bolivia, Tarija	MG722107	MG722357	MG722289	MG722482	MG722211	MG722610
TYRANNIDAE	Fluvicolinae	<i>Knipolegus cabanisi</i>	ZMUC 126257	Bolivia, Chuquisaca	KC157434	KC157473	KC157536	MG722479	MG722209	MG722607
TYRANNIDAE	Fluvicolinae	<i>Knipolegus cyanostris</i>	USNM 630117	Uruguay, Tacarembó	MG722106	MG722356	MG722288	MG722480	MG722210	MG722608
TYRANNIDAE	Fluvicolinae	<i>Knipolegus fransiscanus</i>								
TYRANNIDAE	Fluvicolinae	<i>Knipolegus hudsoni</i>	ZMUC 130056	Bolivia, Beni	MG722108	MG722358	MG722290	MG722483	MG722212	MG722611
TYRANNIDAE	Fluvicolinae	<i>Knipolegus lophotes</i>	USNM 635860	Uruguay, Artigas	MG722105	MG722355	MG722287	MG722478	MG722208	MG722606
TYRANNIDAE	Fluvicolinae	<i>Knipolegus nigerrimus</i>								
TYRANNIDAE	Fluvicolinae	<i>Knipolegus orenocensis</i>	USNM 562356	Brazil, Para	MG722103	MG722353	MG722285	MG722476	MG722206	MG722604
TYRANNIDAE	Fluvicolinae	<i>Knipolegus poecilocercus</i>	ZMUC 125258	Ecuador, Sucumbios	MG722104	MG722354	MG722286	MG722477	MG722207	MG722605
TYRANNIDAE	Fluvicolinae	<i>Knipolegus poecilurus</i>	ZMUC 126362	Ecuador, Zamora-Chinchipec	KC157433	KC157472	KC157535	MG722475	MG722205	MG722603
TYRANNIDAE	Fluvicolinae	<i>Knipolegus signatus</i>	GenBank		JQ288262			JQ288294		JQ288136
TYRANNIDAE	Fluvicolinae	<i>Knipolegus striaticeps</i>	NRM 966782	Paraguay, Boquerón	DQ435471	DQ435523	DQ435491	MG722481	DQ435456	MG722609
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola albifrons</i>	ZMUC 103096	Peru, Lima	MG722117	MG722367	MG722299	MG722494	MG722223	MG722622
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola albilora</i>								
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola alpinus</i>	ZMUC 125219	Ecuador, Chimborazo	EU231735	EU231833	EU231936	MG722488	MG722217	MG722616
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola capistratus</i>	AMNH DOT12128	Argentina, Rio Negro	MG722110	MG722360	MG722292	MG722486	MG722215	MG722614
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola cinereus</i>	ZMUC 126279	Bolivia, Potosí (?)	MG722115	MG722365	MG722297	MG722492	MG722221	MG722620
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola flavinucha</i>	AMNH DOT9932	Argentina, Rio Negro	MG722114	MG722364	MG722296	MG722491	MG722220	MG722619
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola fluviatilis</i>	FMNH #323354	Peru, Madre de Dios	MG722109	MG722359	MG722291	MG722484	MG722213	MG722612
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola frontalis</i>	ZMUC 125321	Peru, Arequipa	MG722111	MG722361	MG722293	MG722487	MG722216	MG722615
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola griseus</i>	AMNH DOT2593	Bolivia, La Paz	MG722113	MG722363	MG722295	MG722490	MG722219	MG722618
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola juninensis</i>								
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola maclovianus</i>	AMNH DOT9936	Argentina, Rio Negro	MG722112	MG722362	MG722294	MG722489	MG722218	MG722617
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola maculirostris</i>	ZMUC 125322	Bolivia, Oruro	EU231736	EU231834	EU231937	–	–	–
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola maculirostris</i>	ZMUC 125323	Peru, Arequipa	–	–	–	MG722485	MG722214	MG722613
TYRANNIDAE	Fluvicolinae	<i>Muscisaxicola rufivertex</i>	ZMUC 125328	Peru, Arequipa	MG722116	MG722366	MG722298	MG722493	MG722222	MG722621

TYRANNIDAE	Fluvicolinae	<i>Polioxolmis rufipennis</i>	ZMUC 125448	Peru, Apurímac	EU231741	EU231839	EU231942	MG722496	MG722225	MG722624
TYRANNIDAE	Fluvicolinae	<i>Cnemarchus erythropygius</i>	ZMUC 125224	Peru, Huánaco	EU231742	EU231840	EU231943	MG722495	MG722224	MG722623
TYRANNIDAE	Fluvicolinae	<i>Xolmis cinereus</i>	NRM 986739	Paraguay, Misiones	MG722122	MG722372	MG722304	MG722505	MG722234	MG722633
TYRANNIDAE	Fluvicolinae	<i>Xolmis coronatus</i>	NRM 570012	Argentina, Santiago del Estero	MG722123	MG722373	MG722305	MG722506	MG722235	MG722634
TYRANNIDAE	Fluvicolinae	<i>Xolmis irupero</i>	NRM 947038	Paraguay, Alto Paraguay	EU231740	EU231838	EU231941	MG722497	MG722226	MG722625
TYRANNIDAE	Fluvicolinae	<i>Xolmis pyrope</i>	NRM 570015	Chile, Los Rios	–	–	–	MG722507	–	–
TYRANNIDAE	Fluvicolinae	<i>Xolmis pyrope</i>	AMNH DOT12144	Chile, Santiago Metropolitano	MG722124	MG722374	MG722306	–	MG722236	MG722635
TYRANNIDAE	Fluvicolinae	<i>Xolmis rubetra</i>	NRM 570014	Argentina, Tucumán	MG722125	–	MG722307	–	–	–
TYRANNIDAE	Fluvicolinae	<i>Xolmis rubetra</i>	AMNH SKIN 786436	Argentina, Misiones	–	MG722375	–	MG722508	MG722237	MG722636
TYRANNIDAE	Fluvicolinae	<i>Xolmis salinarum</i>								
TYRANNIDAE	Fluvicolinae	<i>Xolmis velatus</i>	NRM 976705	Paraguay, Concepción	MG722118	MG722368	MG722300	MG722498	MG722227	MG722626
TYRANNIDAE	Fluvicolinae	<i>Myiotheretes fumigatus</i>	ZMUC 125354	Ecuador, Loja	EU231737	EU231835	EU231938	MG722509	MG722238	MG722637
TYRANNIDAE	Fluvicolinae	<i>Myiotheretes fuscorufus</i>	ZMUC 126982	Bolivia, Cochabamba	MG722126	MG722376	MG722308	MG722510	MG722239	MG722638
TYRANNIDAE	Fluvicolinae	<i>Myiotheretes pernix</i>	AMNH SKIN 72659	Colombia, Santa Marta		MG722377	MG722309	MG722511	MG722240	MG722639
TYRANNIDAE	Fluvicolinae	<i>Myiotheretes striaticollis</i>	UWBM 77238	Bolivia, Santa Cruz	KC157436	KC157475	KC157538	MG722512	MG722241	MG722640
TYRANNIDAE	Fluvicolinae	<i>Neoxolmis rufiventris</i>	ZMUC 135470	Argentina, "Patagonia"	EU231739	EU231837	EU231940	MG722504	MG722233	MG722632
TYRANNIDAE	Fluvicolinae	<i>Agriornis albicauda</i>	ZMUC 125678	Ecuador, Azuay	EU231738	EU231836	EU231939	MG722502	MG722231	MG722630
TYRANNIDAE	Fluvicolinae	<i>Agriornis lividus</i>	AMNH SKIN 785790	Argentina, Rio Negro	MG722121	MG722371	MG722303	MG722503	MG722232	MG722631
TYRANNIDAE	Fluvicolinae	<i>Agriornis micropterus</i>	ZMUC 126599	Bolivia, La Paz	JF970154	JF970165	JF970176	MG722501	MG722230	MG722629
TYRANNIDAE	Fluvicolinae	<i>Agriornis montanus</i>	ZMUC 125180	Ecuador, Cotopaxi	MG722120	MG722370	MG722302	MG722500	MG722229	MG722628
TYRANNIDAE	Fluvicolinae	<i>Agriornis murinus</i>	NRM 570013	Argentina, Tucumán	MG722119	MG722369	MG722301	MG722499	MG722228	MG722627

 No sequence data

 Species lacking data

Table A3. Likelihood values of each of the six different BioGeoBEARS models. AIC score from the DEC+j model providing the best fit ancestral area reconstruction are noted with bold.

Model	LnL	Num-params	d	e	j	AIC	ΔAIC
DEC	-202.1871753	2	0.01607	1.00E-12	0	408.3744	10.38073
DEC+J	-195.9968112	3	0.013277	1.00E-12	0.017607	397.9936	0
DIVALIKE	-213.8824797	2	0.020282	1.00E-12	0	431.765	33.77134
DIVALIKE+J	-206.4243067	3	0.015482	1.00E-12	0.019654	418.8486	20.85499
BAYAREALIKE	-263.3327817	2	0.016189	0.06881	0	530.6656	132.6719
BAYAREALIKE+J	-215.2754332	3	0.011237	1.00E-07	0.036779	436.5509	38.55724

Table A4. Model fitting of maximum likelihood analysis of diversification scenarios rates in the fluvicolines phylogeny. AIC score from the ddx model providing the best fit model are noted with bold.

Model	LH	AIC	ΔAIC
pb	121.8868	-241.774	10.133
bd	121.8868	-239.774	12.133
ddl	126.7428	-249.486	2.421
ddx	127.9534	-251.907	0
y2r	126.9107	-247.821	4.085218

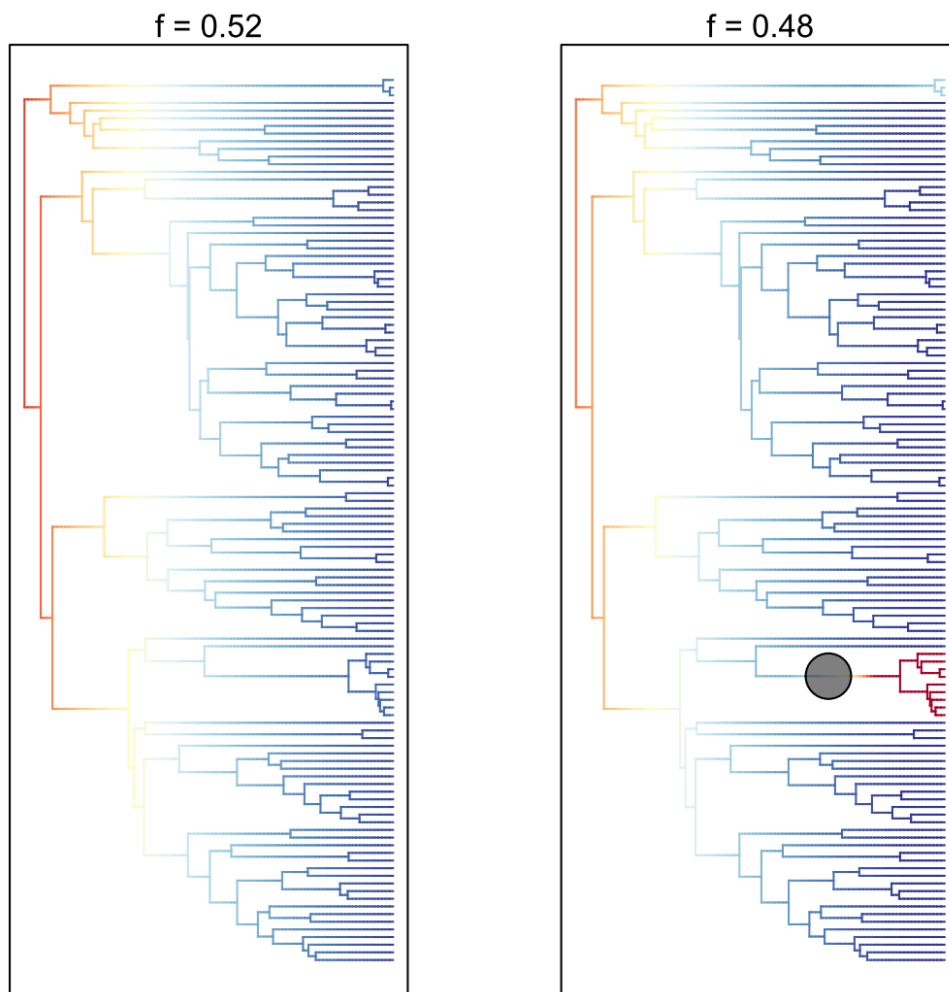


Figure A1. The two most credible rate shift sets (CSS) with the highest posterior probability. Gray circle indicates the rate shift in genus *Muscisaxicola*.

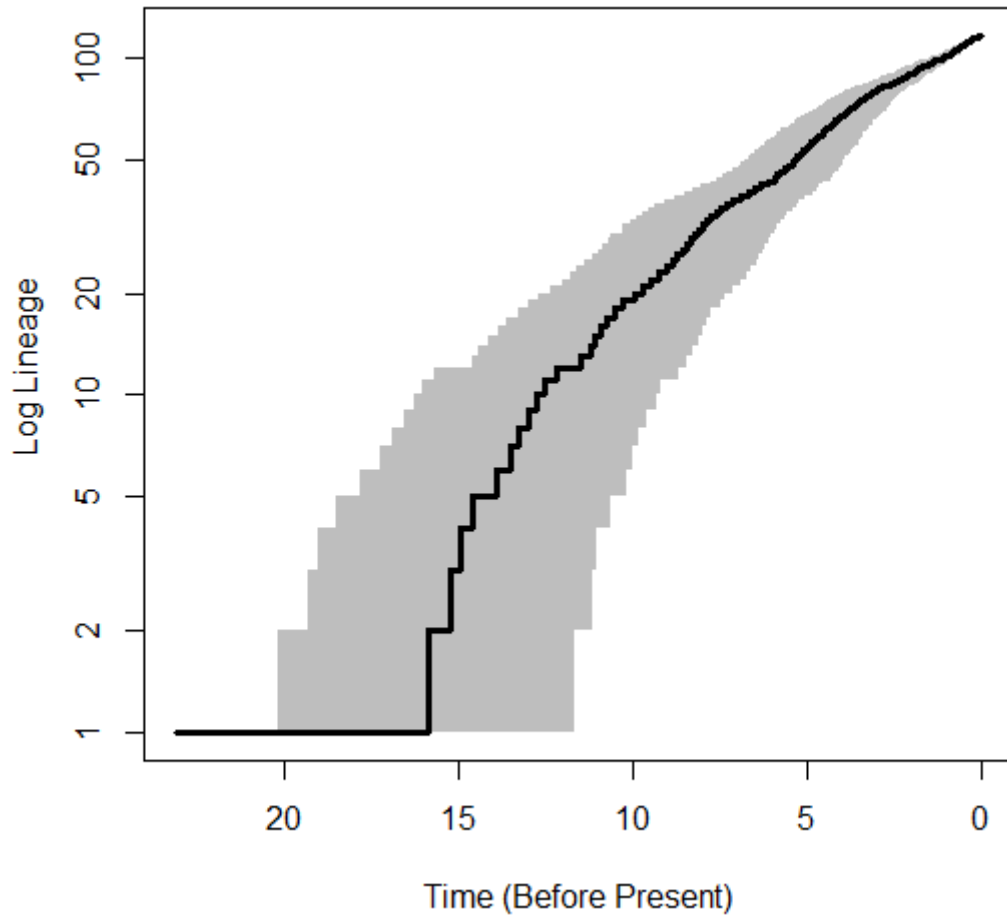


Figure A2. Lineage through time plot (LTT plot) for fluvicolines based on the MCC tree generated by BEAST. Gray area shows the confidence interval of 95% from 1,000 sampled trees from posterior distribution.