diversity

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Table S1. List of dendrobatoid samples included in our phylogenomic analyses and associated locality data. The samples are arranged in the same order as in the phylogeny shown in Fig. S1, and are associated with a four-digit sequence identifier ("Seq ID") so that each sample in the phylogeny can be easily referenced. Coordinates are not available for all samples.

Genus	Species	Lat	Long	Locality	Seq ID
Dendrobates	*auratus*	-	-	Nicaragua: Río San Juan	0541
Dendrobates	*auratus*	-	-	Panama: Bocas del Toro Province: Chiriquí Grande	0234
Dendrobates	*tinctorius*	2.0167	−56.1167	Suriname: Sipaliwini	0786
Dendrobates	*tinctorius*	-	-	captive frog (wild frogs are known from Suriname)	0763
Dendrobates	*leucomelas*	5.3167	−67.2833	Venezuela	0309
Dendrobates	*leucomelas*	5.3167	−67.2833	Venezuela	0236
Oophaga	*pumilio*	9.3446	−82.1758	Panama: Bocas del Toro Province: Bastimentos	0253
Oophaga	*pumilio*	9.1515	−82.2095	Panama: Bocas del Toro Province: Aguacate	0254
Oophaga	*arborea*	-	-	Panama	0246
Oophaga	*histrionica*	-	-	Ecuador: Santo Domingo de los Tsáchilas	0250
Adelphobates	*castaneoticus*	-	-	Brazil	0427
Adelphobates	*castaneoticus*	-	-	Brazil	0176
Adelphobates	*galactonotus*	-	-	Brazil	0266
Adelphobates	*quinquevittatus*	-	-	Brazil	0179
Adelphobates	*quinquevittatus*	−8.9202	−67.1472	Brazil: Amazonas: Boca do Acre: ramal 26	0698
Minyobates	*steyermarki*	-	-	Venezuela: Amazonas: Cerro Yapacana	0245
Ranitomeya	*reticulata*	−4.2030	−73.4796	Peru: Loreto: km 52.5 on road from Iquitos-Nauta	0417
Ranitomeya	*reticulata*	−3.8308	−73.3733	Peru: Loreto: Arboretum de la UNAM, camino hacia Puerto Almendras	0395
Ranitomeya	*summersi*	−6.7266	−76.2227	Peru: San Martin: Sauce	0400
Ranitomeya	*defleri*	−1.0771	−69.5143	Colombia: Vaupes: Caparu	0055
Ranitomeya	*defleri*	−1.0771	−69.5143	Colombia: Vaupes: Caparu	0056
Ranitomeya	*variabilis*	−6.2101	−76.2723	Peru: San Martin: Bonilla	0401
Ranitomeya	*variabilis*	−6.9224	−76.8564	Peru: San Martin: Saposoa	0125
Ranitomeya	*imitator*	−6.4547	−76.3488	Peru: San Martin: Tarapoto	0404
Andinobates	*minutus*	-	-	Panama	0244
Andinobates	*claudiae*	9.4048	−82.2692	Panama: Bocas del Toro Province: Bocas	0243
Excidobates	*captivus*	−4.4467	−77.6436	Peru: Amazonas: Santiago Valley	0238
Excidobates	*captivus*	−4.4467	−77.6436	Peru: Amazonas: Santiago Valley	0239
Excidobates	*mysteriosus*	−5.4516	−78.5660	Peru: Cajamarca: Santa Rosa	0755
Phyllobates	*vittatus*	−6.2511	−76.3146	Costa Rica: Corcovado	0262
Phyllobates	*vittatus*	8.5000	−83.6000	Costa Rica	0784
Phyllobates	*terribilis*	-	-	captive frog (wild frogs are known from Colombia)	0756
Ameerega	*rubriventris*	−9.0555	−75.6630	Peru: Ucayali: Near Aguaytia	0298
Ameerega	*rubriventris*	−9.0519	−75.6647	Peru: Ucayali: Near Aguaytia	0219
Ameerega	*cainarachi*	−6.4375	−76.2901	Peru: San Martin: Cainarachi Valley	0004
Ameerega	*cainarachi*	−6.5432	−76.1110	Peru: San Martin: Curiyacu	0006
Ameerega	*trivittata*	−11.6343	−73.0573	Peru: Cusco: La Convencion, Saniri (Malvinas)	0504
Ameerega	*trivittata*	−4.1811	−60.8050	Brazil: Amazonas: Campo Tupana	0189
Ameerega	*braccata*	−14.9108	−55.7639	Brazil: Mato Grosso: APM Manso	0175
Ameerega	*braccata*	−14.9108	−55.7639	Brazil: Mato Grosso: APM Manso	0177
Ameerega	*bassleri*	−6.3781	−76.6044	Peru: San Martin: Lamas, Rio Mayo	0511
Ameerega	*bassleri*	−6.3468	−76.7274	Peru: San Martin: Roque	0183
Ameerega	*parvula*	−4.4121	−77.6447	Peru: Amazonas: Cordillera Campanquiz	0204

Ameerega	*parvula*	−2.6516	−76.5137	Peru: Loreto: Andoas	0500
Ameerega	*silverstonei*	−9.1612	−75.8035	Peru: Huánuco	0031
Ameerega	*silverstonei*	−9.1612	−75.8035	Peru: Huánuco	0032
Colostethus	*pratti*	9.1521	−79.8465	Panama: Guna Yala: Nusagandi	0304
Epipedobates	*anthonyi*	3.3000	−79.3000	Ecuador: Azuay: Santa Isabel	0787
Epipedobates	*anthonyi*	3.3000	−79.3000	Ecuador: Azuay: Santa Isabel	0789
Silverstoneia	*nubicola*	9.1521	−79.8465	Panama: Guna Yala: Nusagandi	0303
Hyloxalus	*sp. 3*	−6.5830	−76.5097	Peru: San Martin: Sisa	0265
Hyloxalus	*sp. 3*	−6.5830	−76.5097	Peru: San Martin: Sisa	0270
Hyloxalus	*azureiventris*	−6.4337	−76.2836	Peru: San Martin: Cainarachi Valley	0314
Hyloxalus	*sp. 1*	−6.8672	−76.7403	Peru: San Martin: Saposoa	0810
Hyloxalus	*sp. 2*	−6.8672	−76.7403	Peru: San Martin: Saposoa	0821
Hyloxalus	*nexipus*	−6.4500	−76.1800	Peru: San Martin: Cainarachi Valley	0796
Hyloxalus	*nexipus*	−6.4500	−76.1800	Peru: San Martin: Cainarachi Valley	0797
Allobates	*femoralis*	−3.6520	−72.2005	Peru: Loreto: Rio Manati	0268
Allobates	*femoralis*	−4.3075	−73.1778	Peru: Loreto: Tahauyo	0798
Allobates	*femoralis*	−6.5372	−76.1300	Peru: San Martin: Chazuta	0793
Allobates	*sp.*	−11.2375	−74.6177	Peru: Satipo: Satipo	0802

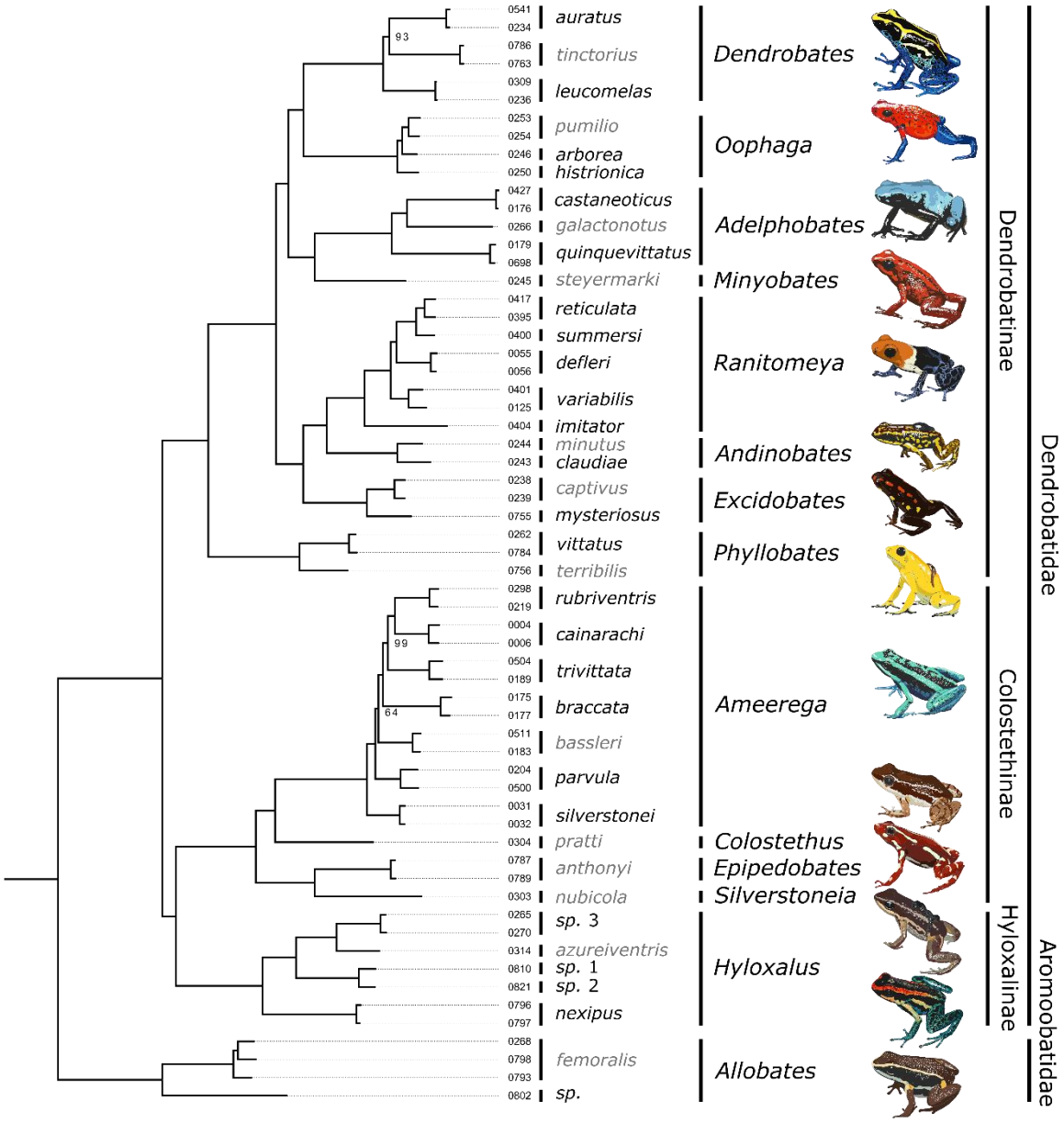

Figure S1. Species-level phylogeny of all 61 samples included in the study, constructed using IQ-TREE (maximum likelihood). Only bootstrap values under 100% are shown. Each tip is labeled with a four-digit sequence identifier that refers to that sample's corresponding information in Table S1. Clade labels categorize each sample into a taxonomic hierarchy. Gray species labels specify the illustrated species for that genus. Art by WXG.

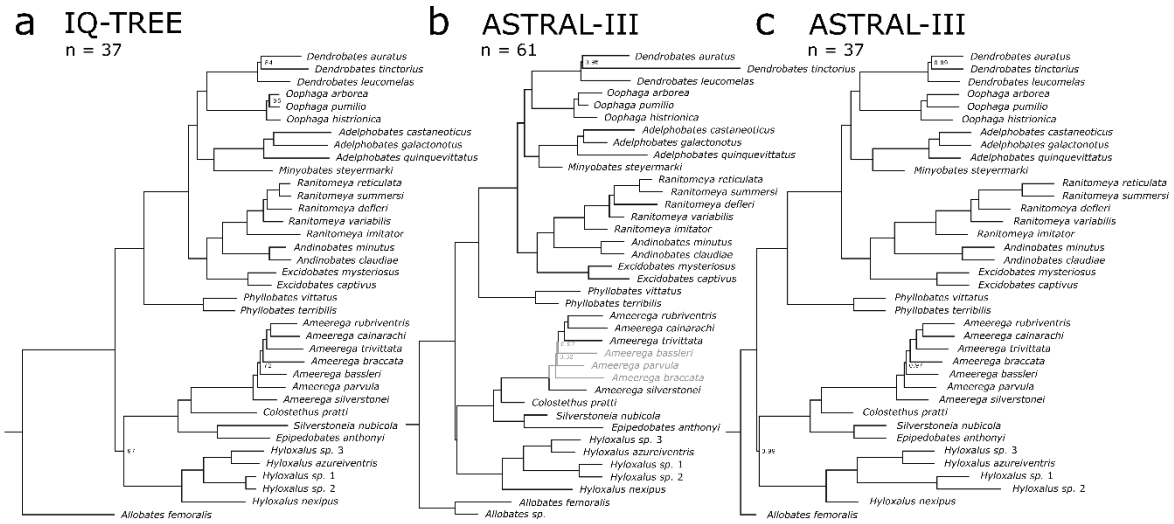

Figure S2. Comparison of phylogenies created with different methods and taxon sets. The only differences in topology, highlighted in gray, between the three phylogenies are the placements of *Ameerega bassleri, A. parvula,* and *A. braccata* in the comprehensive ASTRAL-III species tree (b). **a.** Maximum likelihood tree made using IQ-TREE with the restricted dataset (*n* = 37, one sample per species). Only bootstrap values below 100% are shown. In terms of species relationships, the topology is identical to the ML tree constructed from the comprehensive dataset (*n* = 61; see Figure S1). **b.** Species tree made using ASTRAL-III with the comprehensive dataset (*n* = 61, all samples). Each sample was assigned to one of 38 species (the unidentified sample 0802 was regarded as *Allobates sp.*, which was not included in the other two analyses shown). Node labels represent local posterior probabilities; only values below 1.00 are shown. **c.** Species made using ASTRAL-III with the restricted dataset (*n* = 37, one sample per species). Each sample was assumed to represent a separate species in the ASTRAL analysis. Only local posterior probabilities below 1.00 are shown.

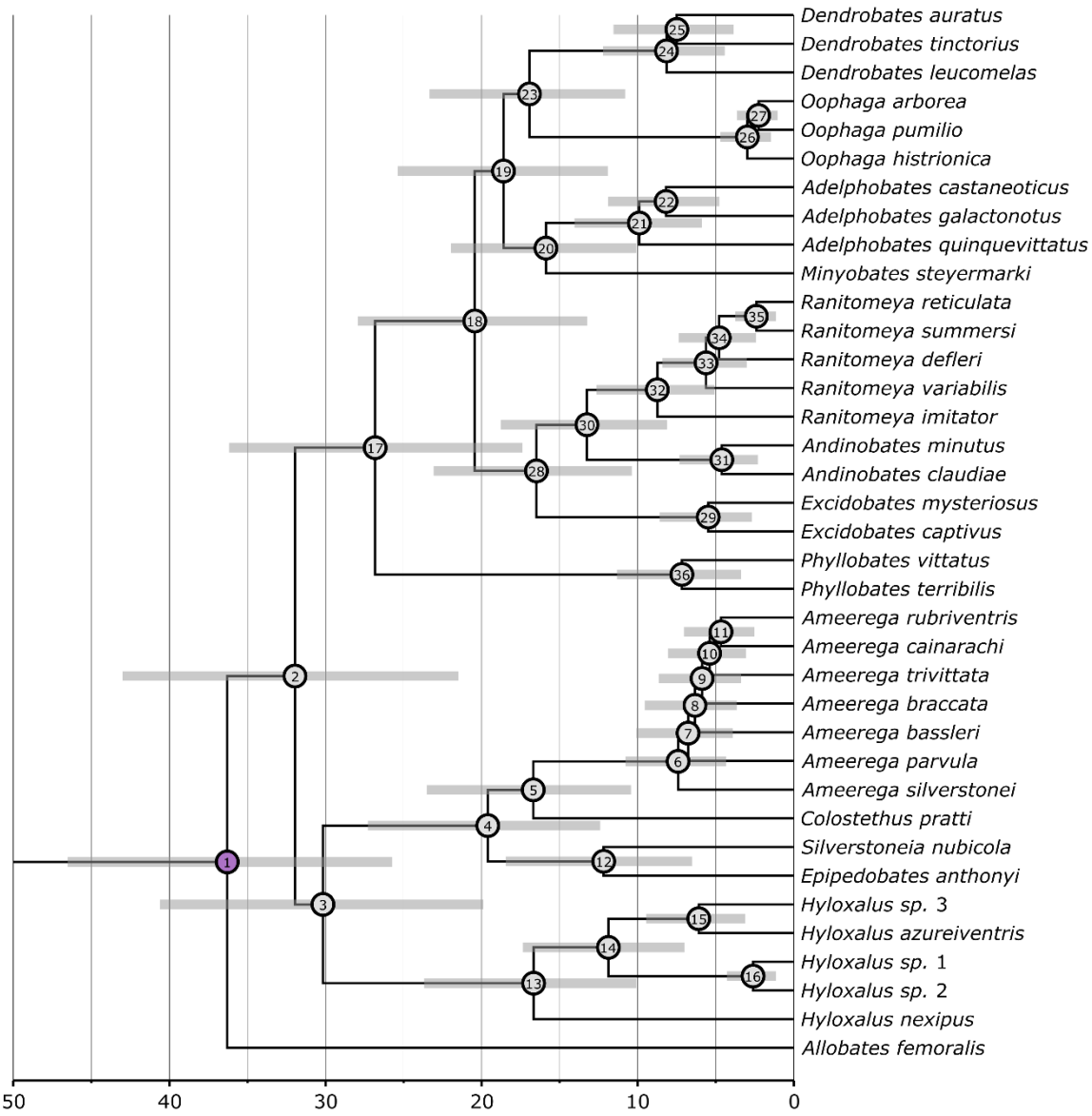

Figure S3. Species-level chronogram calibrated with BEAST 2. The topology was generated with ASTRAL-III and is identical to that shown in Figure S2c. The topology shown in Figure 1 is identical to this one, but reduced to one tip per genus to illustrate intergeneric relationships. Error bars, representing 95% highest posterior density estimates, are shown in gray to illustrate uncertainty in divergence time estimation. Numbered node labels identify each node, and correspond to the first column ("Node") of Table S2. The time scale along the bottom is shown in mya. The calibration node (normal distribution; $\mu = 38.534$ Ma; $\sigma = 5.151$ Ma), taken from Santos et al. (2009) [1], is highlighted in purple.

Table S2. Summary of divergence time estimation with BEAST 2. Each row in column "Node" corresponds to a labeled node in the chronogram shown in Fig. S3. The recovered node height, which is displayed in Fig. S3, is given in column "Height (disp.)". Note that this does not necessarily correspond to the median or mean height. Additionally, values describing the probability distribution of each node, including the range, 95% highest posterior density estimates, and median, are given. All values are in units of mya.

Node	Height (disp.)	Max. ht.	Upper 95% HPD	Median ht.	Lower 95% HPD	Min. ht.
1	36.25358645	60.77095	46.4813	36.27197	25.68745	12.63606
2	31.91422495	55.68044	42.95814	31.80686	21.45143	10.79615
3	30.12273286	53.80695	40.56341	29.99769	19.86049	10.15693
4	19.56700129	39.20608	27.23773	19.39178	12.368	5.656624
5	16.65203418	35.09825	23.4684	16.45772	10.39122	4.848006
6	7.375617104	17.78316	10.74023	7.207104	4.291475	2.133474
7	6.733916814	16.2293	10.04279	6.545363	3.867475	1.834237
8	6.294688958	15.72998	9.502899	6.1088	3.619475	1.830937
9	5.839711928	13.2777	8.598714	5.70028	3.345513	1.793648
10	5.359734596	12.84069	8.012457	5.223851	3.036788	1.712064
11	4.625731524	11.28681	6.992268	4.513414	2.481786	1.261675
12	12.14075797	30.5831	18.41602	11.85075	6.471562	2.491643
13	16.62851735	36.90615	23.64513	16.40669	10.05966	5.543337
14	11.83809113	28.23349	17.31974	11.59368	6.975079	3.832595
15	6.054158025	17.62524	9.425763	5.880519	3.07685	1.297266
16	2.574052479	9.824354	4.252991	2.463652	1.107041	0.50471
17	26.77857573	50.73872	36.12178	26.65453	17.34252	8.015631
18	20.39553344	41.19466	27.90605	20.25175	13.20592	5.721701
19	18.56027222	35.29435	25.32972	18.43042	11.87775	5.297008
20	15.84111097	30.69026	21.92815	15.70357	10.06012	4.348138
21	9.856938357	20.60769	14.01317	9.72813	5.858618	2.469769
22	8.14309311	18.86906	11.85305	8.013754	4.7407	2.103187
23	16.89530798	32.77063	23.29554	16.76496	10.7673	5.064818
24	8.115917086	21.83098	12.19823	7.886734	4.381635	1.938369
25	7.453850946	20.93639	11.5122	7.18785	3.819138	1.909217
26	2.937318443	10.962	4.671066	2.825351	1.434777	0.773111
27	2.22064693	7.09862	3.591908	2.138863	1.004913	0.423036
28	16.44656288	34.11568	23.02598	16.24137	10.3381	4.256341
29	5.444711422	18.21891	8.555901	5.257179	2.639035	1.101239
30	13.21225054	27.21387	18.74592	13.01374	8.074005	3.237876
31	4.574922185	13.11839	7.294935	4.403523	2.259423	1.164068
32	8.707995985	20.03068	12.5917	8.54936	5.025223	1.887123
33	5.583506843	14.45639	8.378224	5.460368	2.988064	1.279793
34	4.741530431	12.25217	7.337016	4.611957	2.380069	0.920262
35	2.362666062	7.604718	3.715163	2.284335	1.104331	0.568122
36	7.131943697	25.28343	11.2972	6.856726	3.34243	1.691064

Table S3. IUCN Red List categories by genus.

Genus	Data Deficient	Least Concern	Vulnerable	Near Threatened	Endangered	Critically Endangered	Total
Adelphobates	0	3	0	0	0	0	3
Allobates	19	14	5	2	5	1	46
Ameerega	6	15	3	0	5	1	30
Andinobates	2	2	6	0	2	2	14
Anomaloglossus	13	3	3	0	1	0	20
Aromobates	2	0	0	0	9	3	14
Colostethus	11	4	1	1	2	1	20
Dendrobates	1	4	0	0	0	0	5
Ectopoglossus	7	0	0	0	1	0	8
Epipedobates	0	1	0	2	1	0	4
Excidobates	0	0	1	0	1	0	2
Hyloxalus	31	8	5	3	5	5	57
Leucostethus	1	1	0	0	0	0	2
Mannophryne	3	0	2	2	5	4	16
Minyobates	0	0	0	0	0	1	1
Oophaga	1	2	1	1	2	0	7
Paruwrobates	3	0	0	0	0	0	3
Phyllobates	0	2	0	0	3	0	5
Ranitomeya	3	9	2	0	1	0	15
Rheobates	1	4	0	0	0	0	5
Silverstoneia	3	1	0	2	2	0	8
Total	107	73	29	13	45	18	285
Average Percentage	37.5%	25.6%	10.2%	4.6%	15.8%	6.3%	

Table S4. IUCN Red List categories by country.

Country	Data Deficient	Least Concern	Near Threatened	Vulnerable	Endangered	Critically Endangered	Total
Bolivia	0	15	1	0	0	0	16
Brazil	18	26	1	2	1	0	48
Colombia	32	35	5	10	9	6	97
Costa Rica	0	5	1	1	1	0	8
Ecuador	16	17	6	3	6	5	53
French Guiana	1	9	0	0	0	0	10
Guyana	7	8	0	2	1	0	18
Martinique	0	0	0	1	0	0	1
Nicaragua	0	4	0	0	0	0	4
North America	0	1	0	0	0	0	1
Panama	5	9	1	1	3	0	19
Peru	22	30	3	7	12	1	75
Suriname	7	1	0	0	0	0	8
Trinidad and Tobago	0	0	0	2	0	0	2
Venezuela	20	7	2	3	14	9	55
Total:	128	167	20	32	47	21	415
Average Percentage:	30.8%	40.2%	4.8%	7.7%	11.3%	5.1%	

Reference

1. Santos, J.C.; Coloma, L.A.; Summers, K.; Caldwell, J.P.; Ree, R.; Cannatella, D.C. Amazonian amphibian diversity Is primarily derived from late Miocene Andean lineages. *PLoS Biol.* **2009**, *7*, e1000056.