Table S3: Diversity indices by population. Marker, species/population name, number of individuals (N), number of base pairs (BP), number of segregating sites (S), number of haplotypes (h), haplotype diversity (hd), nucleotide diversity (pi).

River	Article	Specie/Population	Marker	N	BP	S	h	Hd	Pi	Theta per site	sd Theta	Theta per seq	Variance Theta
AMAZON RIVER	Fairley et al., 2002	***Anopheles aquasalis***		52	588	21	15	0,8670	0,0112	0,0079	0,0027	4,6470	2,5450
		North		12	588	12	9	0,9390	80,0000	0,0113	0,0049	6,6230	8,2730
		South	mtDNA (COI)	10	588	12	4	0,8220		0,0072	0,0000	4,2420	4,1610
	Armenta, Weckstein and Lane, 2005	***Capito niger, C. auratus, e C. brunneipectus***		21	1.048	168	20	0,9950	0,0432	0,0447	0,0152	46,6960	250,9270
		North		18	1.048	143	17	0,9930	0,0387	0,03978	0,01404	41,575	215,192
		South	mtDNA (Cyt-B)	3	1.048	65	3	1,0000	0,0414	0,04135	0,02505	43,333	689,206
	Machado et al., 2019	***Hylaeamys megacephalus***		147	708	150	123	0.9974	0.04091	0,03879	0,00923	26,958	41,120
		North		55	708	71	44	0,9910	0,0110	0,02195	0,00641	15,518	20,508
		South	mtDNA (Cyt-B)	92	708	121	80	0,9970	0,0249	0,03418	0,00885	23,755	37,823
	Gibbs et al., 2018	***Bothrops atrox***		25	674	44	13	0,8870	2,1440	0,0173	0,0061	11,6530	16,5060
		North		15	674	43	10	0,9430	0,0261	0,01968	0,00762	13,224	26,227
		South	mtDNA (Cyt-B)	10	674	2	3	0,3780	0,0006	0,00105	0,00080	0,707	0,290
	Cronemberger et al., 2022	***Kentropyx calcarata***		214	782	169	115	0,9868	3,2940	0,0401	0,0090	28,4470	40,5140
		North		70	782	126	43	0,9490	0,0237	0,03519	0,00951	26,149	49,938
		South	mtDNA (Cyt-B)	144	782	120	76	0,9840	0,0337	0,02945	0,00712	21,647	27,419
	Avila-Pires et al., 2012	***Gonatodes humeralis***		56	816	225	39	0,9820	4,9290	0,0600	0,0165	48,9810	48,9810
		North		21	816	142	13	0,9290	0,0484	0,04837	0,01648	39,469	180,781
		South	mtDNA (Cyt-B)	35	816	160	26	0,9780	0,0454	0,04761	0,01450	38,852	139,927
		Kentropyx calcarata		66	820	128	50	0,9910	2,9580	0,0343	0,0094	26,8950	53,8210
		North		44	820	80	33	0,9850	0,0238	0,02376	0,00679	18,391	30,596
		South		22	820	80	17	0,9740	0,0292	0,02781	0,00958	21,946	57,085
	Eizirik et al., 2000	***Panthera onca***		30	807	27	16	0.915	0.00782	0,01077	0,00383	6,815	5,884
		North		20	807	22	10	0,8320	0,0051	0,00950	0,00371	6,201	5,873
		South	mtDNA (Cyt-B)	10	807	15	7	0,9110	0,0100	0,00805	0,00375	5,302	6,108
	Pedro & Sallum, 2009	***Anopheles darlingi***		101	978	65	23	0,8810	909,0000	0,0128	0,0034	12,5300	11,2710
		North		-									
		South	mtDNA (COI)	-									
	Santos et al., 2022	***Uranoscodon superciliosus***		95	399	59	34	0,9430	4,1050	0,0455	0,0124	11,5100	9,8730
		North		20	399	29	12	0,9420	0,0186	0,02603	0,00984	8,174	9,555
		South	mtDNA (12S)	75	399	58	28	0,9240	0,0403	0,04653	0,01317	11,866	11,272
	Guimarães et al., 2021	***Marmosops complex***		52	772	107	33	0,9790	8,2310	0,0562	0,0003	23,6790	46,1960
		North		16	772	122	13	0,9670	0,0799	0,05700	0,02076	36,767	179,366
		South	mtDNA (Cytb-B)	36	772	75	22	0,9670	0,0515	0,04296	0,01346	18,086	32,099
	Pedro, Uezu and Sallum, 2010	***Anopheles triannulatus***		71	449	64	50	0,9800	0,0197	0,0295	0,0083	13,2430	14,0070
		North		-									
		South	mtDNA (COI)	-									
	De Thoisy et al., 2010	***Tapirus terrestris***		45	1.069	63	35	0,9880	0,009	0,0134900	0,0000169	14,4070000	19,2730000
		North		23	1.069	46	18	0,9720	0,009	0,01166	0,00412	12,463	19,354
		South	mtDNA (Cyt-B)	22	1.069	39	19	0,9870	0,008	0,01002	0,00362	10,699	14,909
	MarquesSouza et al., 2019	***Loxopholis osvaldoi***		258	645	104	146	0,9897	0,013	0,0263100	0,0025800	16,9710000	2,7690000
		North		28	645	39	23	0,9790	0,013	0,01554	0,00249	10,022	2,575
		South	nuDNA (NT3)	230	645	100	134	0,9900	0,013	0,02578	0,00258	16,630	2,766
	Moura et al., 2020	***Arremon taciturnus***		96	891	64	62	0.976	0.00817	0,02026	0,00548	12,460	11,342
		North		16	891	26	13	0,9670	0,007	0,01066	0,00425	7,836	9,771
		South	mtDNA (Cyt-B)	80	891	57	53	0,9690	0,009	0,01784	0,00501	11,508	10,441
	Nascimento et al., 2013	***Thrichomys laurentius***		36	1140	55	27	0.952	0.00906	0.01939	0.00621	13.263	18.042
		North		34	1140	44	25	0,947	0,006	0,01557	0,00514	10,761	12,602
		South	mtDNA (Cyt-B)	2	1140	1	2	1,000	0,001	0,00131	0,00131	1,000	1,000
	Nascimento et al., 2013	***Thrichomys inermis***		10	1140	107	8	0.933	0.05857	0.048	0.01974	37.823	242.041
		North		6	1140	17	4	0,800	0,008	0,00653	0,00336	7,445	14,696
		South	mtDNA (Cyt-B)	4	1140	58	1	1,000	0,037	0,04015	0,02201	31,636	300,765
	Nascimento et al., 2013	***Thrichomys apereoides***		10	1140	38	6	0.867	0.01934	0.01513	0.00648	13.432	33.095
		North		6	1140	30	4	0,800	0,012	0,01478	0,00732	13,139	42,331
		South	mtDNA (Cyt-B)	4	1140	2	2	0,500	0,001	0,00099	0,00080	1,091	0,767
	Oliveira et al., 2018	***Dermatonotus muelleri***		179	514	101	59	0.907	0.03497	0.0341	0.00811	17.529	17.358
		North		157	514	99	49	0,898	0,038	0,03421	0,00344	17,584	3,123

River	Article	Specie/Population	Marker	N	BP	S	h	Hd	Pi	Theta per site	sd Theta	Theta per seq	Variance Theta
SÃO FRANCISCO RIVER		South	mtDNA (NAD2)	22	514	101	59	0,907	0,035	0,03410	0,00339	17,529	3,042
		Gracilinanus agilis		59	1149	165	44	0.987	0.03033	0.03091	0.00851	35.512	95.536
	Faria et al., 2013	North		52	1149	147	38	0,984	0,028	0,02831	0,00801	32,531	84,698
		South	mtDNA (Cyt-B)	7	1149	12	6	0,952	0,004	0,00426	0,00220	4,898	6,376
		Polychrus acutirostris		68	838	216	62	0.996	0.05721	0.05596	0.01488	45,100	143,751
	Fonseca et al., 2018	North		62	838	190	56	0,995	0,053	0,04904	0,01331	40,458	120,584
		South	mtDNA (Cyt-B)	5	838	140	6	1,000	0,087	0,07486	0,03549	61,314	845,005
		rufifrons		25	1041	16	12	0.887	0.00265	0.00407	0.00161	4.237	2.824
	Corbett et al., 2020	North		7	1041	2	3	0,524	0,001	0,00078	0,00055	0,816	0,333
		South		18	1041	14	10	0,876	0,003	0,00391	0,00104	4,070	1,183
		Tropidurus semitaeniatus		118	402	98	77	0.985	0.08739	0.06872	0.01707	17.936	19.84
	Werneck et al., 2015	North		74	402	81	37	0,961	0,083	0,06367	0,01753	16,617	20,930
		South	mtDNA (Cyt-B)	44	402	66	33	0,986	0,034	0,04771	0,01454	15,172	21,387
		Calomys expulsus		58	1137	80	36	0.950	0.00920	0,01599	0,00458	17,282	24,554
	Do Nascimento et al., 2011	North		46	1137	56	26	0,922	0,005	0,01172	0,00359	12,742	15,259
		South	mtDNA (Cyt-B)	12	1137	36	10	0,970	0,010	0,01056	0,00435	11,921	24,108
		Lutzomyia longipalpis s.l.		96	261	24	34	0.943	0.01119	0.0179	0.00559	4.673	2.13
	Coutinho-Abreu et al., 2008; Hodgkinson et al., 2002;2003	North		44	261	13	22	0,936	0,011	0,01145	0,00443	2,989	1,338
		South	mtDNA (Cyt-B)	52	261	20	21	0,919	0.01056	0,01696	0,00588	4,426	2,352
		Cnemidophorus ocellifer		398	393	83	128	0.9664	0.02006	0,03400	0,00748	12,648	7,733
	Oliveira et al., 2015	North		1	392	69	94	0,946	0,018	0,02939	0,00686	11,079	6,690
		South	mtDNA(12S)	1	392	46	41	0,939	0.02449	0,02302	0,00633	8,679	5,693
		caryothraustes brasiliensis/canadensis		32	1035	129	24	0.976	0.04002	0.03219	0.01005	32.032	100.056
	Bocalini et al., 2021	North		21	1035	124	17	0,976	0,046	0,03464	0,01185	34,466	138,935
		South	mtDNA (ND2)	11	1035	10	9	0,964	0.00214	0,00330	0,00161	3,414	2,771
		Hemithraupis_flavicollis		17	1026	43	13	0.949	0.02638	0.02386	0.009	12.719	23
	Bocalini et al., 2021	North		16	1026	41	12	0,942	0,027	0,02318	0,00888	12,356	22,420
		South	mtDNA (ND2)	1									
		Phaethornis		50	1035	60	14	0.72	0.02779	0.04619	0.01388	13.395	16.208
	Bocalini et al., 2021	North		1									
		South	mtDNA (ND2)	1									
		Picumnus		26	963	57	14	0.905	0.01806	0.01592	0.0054	14.937	25.686
	Bocalini et al., 2021	North		23	963	48	11	0,877	0,017	0,01386	0,00488	13,005	20,936
		South	mtDNA (ND2)	3	963	3	3	1,000	0.00208	0,00208	0,00157	2,000	2,286
		Platyrinchus		113	1009	18	16	0.750	0.03867	0,03816	0,01251	3,396	1,240
	Bocalini et al., 2021	North		56	1009	47	24	0,934	0,034	0,03279	0,00991	10,232	9,561
		South	mtDNA (ND2)	57	1009	20	14	0,793	0.00622	0,00839	0,00288	4,337	2,211
		Tangara		31	1018	139	17	0.903	0.02858	0.03794	0.01189	34.794	118.976
	Bocalini et al., 2021	North		15	1018	108	7	0,657	0,016	0,03358	0,01247	33,215	152,007
		South	mtDNA (ND2)	16	1018	59	10	0,925	0.01048	0,01939	0,00726	17,781	44,369
		Thalurania		147	1012	97	53	0.920	0.03725	0,03953	0,00969	17,433	18,247
	Bocalini et al., 2021	North		119	1012	114	52	0,902	0,029	0,04243	0,01059	21,300	28,283
		South	mtDNA (ND2)	28	1012	53	12	0,796	0.01963	0,03047	0,01025	13,620	20,975
		Wiedomys cerradensis		25	770	22	18	0.97	0.00954	0.01588	0.00598	5.826	4.82
		Wiedomys pyrrhorinos		16	1140	20	15	0.992	0.00599	0.00839	0.00345	6.027	6.148
	Di Nizo et al., 2024	***Wiedomys cerradensis & pyrrhorinos***		41	769	61	25	0.962	0.06539	0.03938	0.01223	14.257	19.589
		North		24	769	20	17	0,967	0,009	0,01463	0,00563	5,356	4,243
		South		17	769	106	15	0,978	0.02083	0,04373	0,01577	31,354	127,831
		Eurolophosaurus divaricatus (N=9); Eurolophosaurus nanuzae (N=8); Eurolophosaurus amathites = (N=3)		20	209	58	16	0.979	0.979	0.07822	0.02795	16.348	34.128
	Passoni, Benozzati and Rodrigues, 2008	North		9	209	20	7	0,944	0,048	0,03521	0,01624	7,359	11,522
		South	mtDNA (Cyt-B)	11	209	41	9	0,964	0.09369	0,06698	0,02791	13,998	34,030
		Calyptommatus sinebrachiatus, Calyptommatus leiolepis, Calyptommatus confusionibus e Calyptommatus nicterus		19	242	48	17	0.988	0.06993	0.05675	0.02075	13.733	25.209
	Siedchlag et al., 2010	North		11	242	33	11	1,000	0,048	0,04656	0,01968	11,267	22,681
		South	mtDNA (Cyt-B)	8	242	33	7	0,964	0,06434	0,05259	0,02400	12,727	33,746

River	Article	Specie/Population	Marker	N	BP	S	h	Hd	Pi	Theta per site	sd Theta	Theta per seq	Variance Theta
DOCE RIVER	Santos, Scherrer and Loss, 2018	***Miobantia fuscata***		102	602	193	55	0,981	0,104	0,067	0,017	37,135	85,447
		North		59	602	146	31	0,960	0,080	0,05371	0,01486	31,423	75,525
		South	mtDNA (COI)	43	602	171	26	0,973	0.10012	0,07020	0,02048	39,522	132,905
	Menezes et al., 2016	***Scinax eurydice***	nuDNA (28S)	94	768	8	6	0,601	0,004	0,00207	0,00073	1,564	0,306
		North		63	768	7	5	0,484	0,002	0,00196	0,00074	1,485	0,315
		South		31	768	2	3	0,529	0.00072	0,00065	0,00046	0,501	0,125
	Pellegrino et al., 2005	***Gymnodactylus darwinii complex***	mtDNA (Cyt-B)	42	794	76	13	0.717	0.06229	0,05164	0,01571	17,662	28,885
		North		16	794	106	11	0,950	0,098	0,07005	0,02562	31,945	136,508
		South		26	794	2	3	0,280	0,00084	0,00152	0,00113	0,524	0,151