

Additional file 4. Constrained tree ASR results (MPS = Most Parsimonious State(s); ML = Maximum Likelihood).

Character	State	Serpentes			Total Group		
		MPS	ML	SIMMAP	MPS	ML	SIMMAP
Diel Activity Pattern	0		0	0.0106		0	0.0746
	1		0	0.0128		0	0.0910
	2	X	1	0.9766	X	1	0.8344
Tectonic Plate I	0		0.1212	0.1222	X	0.4436	0.4418
	1	X	0.8788	0.8778		0.5564	0.5582
Tectonic Plate II	0	X	0.0378	0.0820	X	0.1850	0.1932
	1	X	0.5482	0.5768		0.4443	0.5118
	2		0.0050	0.0092		0.0143	0.0198
	3	X	0.0050	0.0570		0.0144	0.1080
	4	X	0.3647	0.0396		0.2806	0.0336
	5	X	0.0206	0.0154		0.0177	0.0228
	6		0.0060	0.0126		0.0145	0.0202
	7		0.0073	0.1982		0.0148	0.0688
Biome	8		0.0054	0.0092		0.0144	0.0218
	0	X	0.1111	0.9974	X	0.1111	0.9856
	1		0.1111	0.0012		0.1111	0.0018
	2		0.1111	0.0002		0.1111	0.0034
	3		0.1111	0.0002		0.1111	0.0012
	4		0.1111	0		0.1111	0.0006
	5		0.1111	0.0006		0.1111	0.0046
	6		0.1111	0.0002		0.1111	0.0010
Foraging Mode	7		0.1111	0		0.1111	0.0006
	8		0.1111	0.0002		0.1111	0.0012
	0		0.0002	0		0.0028	0.0022
Prey Pursuit Method	1	X	0.9998	1	X	0.9965	0.9966
	2		6.65×10^{-5}	0		0.0008	0.0012
Prey Subdued By Constriction	0		0.0022	0.0026		0.0248	0.0266
	1	X	0.9978	0.9974	X	0.9752	0.9734
Prey Preference	0	X	0.7124	0.7078	X	0.8724	0.8668
	1		0.2876	0.2922		0.1276	0.1332
Prey Size	0		9.51×10^{-6}	0.0002		0.0002	0.0002
	1	X	0.9997	0.9990	X	0.9998	0.9998
	2		0.0003	0.0008		4.25×10^{-6}	0
Habitat Strata	0		0.0011	0.0014		0.0561	0.0586
	1	X	0.9983	0.9984	X	0.9430	0.9402
	2		0.0006	0.0002		0.0009	0.0012
Aquatic Habits	0	X	0.2563	0.2584	X	0.1378	0.1402
	1		0.0125	0.0104		0.0118	0.0112
	2	X	0.7266	0.7254	X	0.8318	0.8294
	3		0.0046	0.0058		0.0186	0.0192
Aquatic Habits	0	X	0.9999	1	X	0.9997	0.9998
	1		2.75×10^{-6}	0		8.27×10^{-5}	0
	2		2.45×10^{-6}	0		6.46×10^{-5}	0
	3		2.45×10^{-6}	0		6.46×10^{-5}	0
	4		4.79×10^{-5}	0		8.18×10^{-5}	0.0002