

Additional file 3. Unconstrained 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		0.0007	0.0482		0.0076	0.1544
	1		0.0001	0.0260		0.0006	0.1238
	2	X	0.9992	0.9258	X	0.9919	0.7218
Tectonic Plate I	0		0.1399	0.1368	X	0.4728	0.4618
	1	X	0.8601	0.8632		0.5272	0.5382
Tectonic Plate II	0		0.0603	0.0572	X	0.3135	0.3102
	1	X	0.7489	0.7608		0.4852	0.4926
	2		0.0028	0.0018		0.0106	0.0100
	3		0.0454	0.0410		0.1166	0.1134
	4		0.0153	0.0162		0.0126	0.0114
	5		0.0039	0.0026		0.0107	0.0108
	6		0.0036	0.0032		0.0107	0.0112
	7		0.1172	0.1146		0.0295	0.0304
Biome	0	X	0.1111	0.9990	X	0.1111	0.9902
	1		0.1111	0		0.1111	0.0008
	2		0.1111	0.0002		0.1111	0.0034
	3		0.1111	0.0002		0.1111	0.0016
	4		0.1111	0		0.1111	0.0006
	5		0.1111	0.0002		0.1111	0.0014
	6		0.1111	0.0002		0.1111	0.0004
	7		0.1111	0.0002		0.1111	0.0008
Foraging Mode	0		0.0001	0.0002		0.0011	0.0018
	1	X	0.9998	0.9996	X	0.9985	0.9974
	2		8.42 x 10 ⁻⁵	0.0002		0.0004	0.0008
Prey Pursuit Method	0		0.0027	0.0042		0.0229	0.0262
	1	X	0.9973	0.9958	X	0.9771	0.9738
Prey Subdued By Constriction	0	X	0.8087	0.8002	X	0.9226	0.9198
	1		0.1913	0.1998		0.0774	0.0802
Prey Preference	0		3.91 x 10 ⁻⁶	0		7.04 x 10 ⁻⁶	0
	1	X	0.9999	1	X	0.9999	1
	2		0.0001	0		1.15 x 10 ⁻⁶	0
Prey Size	0		0.0002	0		0.0090	0.0086
	1	X	0.9992	0.9996	X	0.9904	0.9912
	2		0.0006	0.0004		0.0005	0.0002
Habitat Strata	0	X	0.0621	0.0632	X	0.0322	0.0310
	1		0.0059	0.0072		0.0061	0.0082
	2	X	0.9291	0.9272	X	0.9552	0.9546
	3		0.0029	0.0024		0.0064	0.0062
Aquatic Habits	0	X	0.9989	0.9986	X	0.9994	0.9994
	1		6.96 x 10 ⁻⁶	0		6.91 x 10 ⁻⁵	0.0002
	2		6.02 x 10 ⁻⁶	0		4.93 x 10 ⁻⁵	0
	3		6.02 x 10 ⁻⁶	0		4.93 x 10 ⁻⁵	0.0004
	4		0.0011	0.0014		0.0005	0