Table S1. Sampling of species and ontogenetic stages

Alligatoridae	Total	Post Hatching	Embryonic	Adult	Subadult	Juvenile	Hatchling	Late-Stage Embryo	Mid-Stage Embryo
*A. mississippiensis**	28	19	9	6	6	7	0	3	6
*A. sinensis**	13	2	11	1	0	1	2	9	0
*Caiman crocodilus**	24	19	5	4	5	10	2	1	2
*Caiman latirostris**	10	7	3	4	3	0	1	2	0
*Caiman yacare**	5	4	1	0	4	0	0	1	0
*P. palpebrosus**	13	4	9	1	3	0	3	4	2
*P. trigonatus**	9	6	3	2	2	2	1	2	0
Melanosuchus niger	6	6	0	5	1	0	0	0	0
Crocodylidae									
C. acutus	8	8	0	3	2	3	0	0	0
C. johnsoni	2	2	0	1	1	0	0	0	0
C. intermedius	3	3	0	2	1	0	0	0	0
C. mindorensis	1	1	0	0	1	0	0	0	0
*C. moreletii**	22	4	18	1	3	0	0	8	10
C. niloticus †	25	23	2	12	10	1	2	0	0
*C. novaeguineae**	10	7	3	2	3	2	0	3	0
*C. palustris**	7	5	2	4	1	0	1	1	0
*C. porosus**	22	21	1	12	5	4	1	0	0
C. rhombifer †	7	4	3	0	3	1	3	0	0
*C. siamensis**	17	5	12	3	1	1	3	4	5
*O. tetraspis**	15	5	10	1	3	1	3	5	2
*M. cataphractus**	19	13	6	5	6	2	1	1	4
Gavialidae									
*T. schlegelii**	14	10	4	5	5	0	1	3	0
*G. gangeticus**	20	15	5	7	5	3	2	2	1
Total	**300**	**193**	**107**	**81**	**74**	**38**	**26**	**49**	**32**

Table S1. List of the species included in the total ontogeny PCA and the number of specimens sampled per developmental period for each species. Asterisks represent species for which at least one embryo was sampled, while crosses represent species for which at least one hatchling was sampled. "Embryonic" includes mid-stage embryos and late-stage embryos, while "post hatching" includes and hatchlings, juveniles, subadults, and adults.

Table S2. Ecomorphotype Classifications

Alligatoridae	This study	McHenry, 2006	Pierce et al., 2008
A. mississippiensis	Moderate	Mesorostrine	Short & Narrow
A. sinensis	Moderate	Brevirostrine	Short & Narrow
Caiman crocodilus	Blunt	Not Assigned	Short & Broad
Caiman latirostris	Blunt	Brevirostrine	Short & Broad
Caiman yacare	Blunt	Not Assigned	Short & Broad
Melanosuchus niger	Blunt	Mesorostrine	Short & Broad
P. palpebrosus	Moderate	Brevirostrine	Short & Broad
P. trigonatus	Moderate	Brevirostrine	Short & Narrow
Crocodylidae			
C. acutus	Slender	Mesorostrine	Long & Narrow
C. intermedius	Slender	Mesorostrine	Long & Narrow
C. johnsoni	Slender	Longirostrine	Long & Narrow
C. mindorensis	Moderate	Mesorostrine	Short & Narrow
C. moreletii	Moderate	Mesorostrine	Short & Broad
C. niloticus	Moderate	Mesorostrine	Short & Narrow
C. novaeguineae	Slender	Mesorostrine	Long & Narrow
C. palustris	Moderate	Mesorostrine	Short & Broad
C. porosus	Moderate	Mesorostrine	Short & Narrow
C. rhombifer	Moderate	Mesorostrine	Short & Broad
C. siamensis	Moderate	Mesorostrine	Short & Broad
M. cataphractus	Slender	Longirostrine	Long & Narrow
O. tetraspis	Blunt	Brevirostrine	Short & Broad
Gavialidae			
T. schlegelii	Slender	Longirostrine	Long & Narrow
G. gangeticus	Slender	Longirostrine	Long & Broad

Table S2. Comparisons of the crocodylian ecomorphotype classifications schemes of McHenry (2006), and Pierce and colleagues (2008), and this study. Bolded species were reclassified based on our PCA of adults and subadults and underlined taxa are those not previously assigned by McHenry (2006).

Table S3. Principal component loadings and correlations with CAC

	Proportion of Variance	Cumulative Proportion	Standard deviation	CAC Correlation Test Cor	P value
PC1*	**0.61847**	0.61847	0.12210	**0.99260**	**0.00000**
PC2*	**0.20640**	0.82487	0.07053	**0.12090**	**0.03640**
PC3	0.04707	0.87194	0.03368	-0.00510	0.92980
PC4*	0.02926	0.90121	0.02656	-0.00850	0.88350
PC5*	0.02080	0.92200	0.02239	0.00210	0.97050
PC6	0.01414	0.93614	0.01846	-0.00030	0.99520
PC7*	0.01358	0.94972	0.01809	-0.00080	0.98880
PC8	0.00978	0.95950	0.01535	-0.00060	0.99120
PC9	0.00718	0.96668	0.01315	0.00040	0.99440
PC10	0.00642	0.97309	0.01244	-0.00020	0.99710
PC11	0.00487	0.97796	0.01083	-0.00010	0.99920
PC12	0.00417	0.98213	0.01002	0.00000	0.99960
PC13*	0.00296	0.98509	0.00845	-0.00030	0.99590
PC14	0.00267	0.98776	0.00802	0.00010	0.99880
PC15	0.00250	0.99027	0.00777	0.00000	0.99950
PC16	0.00184	0.99211	0.00666	-0.00010	0.99840
PC17	0.00172	0.99382	0.00643	-0.00020	0.99760
PC18	0.00166	0.99549	0.00633	0.00020	0.99760
PC19	0.00137	0.99686	0.00576	0.00000	1.00000
PC20	0.00101	0.99788	0.00494	-0.00010	0.99930
PC21	0.00095	0.99883	0.00478	0.00000	0.99960
PC22	0.00052	0.99934	0.00352	0.00000	0.99980
PC23	0.00045	0.99979	0.00329	0.00000	1.00000
PC24	0.00021	1.00000	0.00225	0.00000	0.99980
PC25	0.00000	1.00000	0.00000	0.09430	0.10300
PC26	0.00000	1.00000	0.00000	-0.03040	0.60010
PC27*	**0.00000**	1.00000	0.00000	**0.22360**	**0.00010**
PC28	**0.00000**	1.00000	0.00000	**0.14310**	**0.01310**

Table S3. The list of principal components resulting from the total ontogeny PCA, the proportion of variance explained by each PC, the cumulative proportion of shape variance and the standard deviation. The last two columns give the results of the test of the correlation between PCs and common allometric component (CAC) scores generated from *procD.allometry* (Cor and p-value).

Table S4. Comparison of skull shape among ecomorphs

full ontogeny

	Blunt	Moderate	Slender
Blunt	-	**0.0039**	**0.0001**
Moderate	0.0550	-	**0.0001**
Slender	0.1936	0.1525	-

Least Squares Mean Distance below and P-values above

mid-skeletal period embryos only

	Blunt	Moderate	Slender
Blunt	-	0.6744	0.4626
Moderate	0.0578	-	0.5739
Slender	0.0919	0.0596	-

Least Squares Mean Distance below and P-values above

late-skeletal period embryos only

	Blunt	Moderate	Slender
Blunt	-	0.5846	**0.0347**
Moderate	0.0451	-	**0.0303**
Slender	0.1300	0.1058	-

Least Squares Mean Distance below and P-values above

hatchlings only

	Blunt	Moderate	Slender
Blunt	-	0.7494	**0.0006**
Moderate	0.0462	-	**0.0005**
Slender	0.2742	0.2450	-

Least Squares Mean Distance below and P-values above

juveniles only

	Blunt	Moderate	Slender
Blunt	-	0.0692	**0.0002**
Moderate	0.0945	-	**0.0065**
Slender	0.2047	0.1397	-

Least Squares Mean Distance below and P-values above

adults & subadults only

	Blunt	Moderate	Slender
Blunt	-	**0.0003**	**0.0001**
Moderate	0.0831	-	**0.0001**
Slender	0.2040	0.1403	-

Least Squares Mean Distance below and P-values above

Table S4. Results of the Procrustes ANOVA comparisons of skull shape among ecomorph groups, within different ontogenetic periods (adults/subadults, juveniles, hatchlings, late-skeletal and mid-skeletal period embryos) and the total dataset. The least squares distance between the mean shape of stages are given on the bottom triangle and the p-value given above. Results reveal that ecomorphs differ significantly among the adults/subadults and total dataset comparisons, but mid-skeletal period ecomorphs are not significantly different.

Table S5. Comparison of skull shape disparity across ontogeny

Pairwise differences in variance & p-values

	Mid-Stage Embryo	Late-Stage Embryo	Hatchling	Juvenile	Sub-Adults	Adults
Mid-Stage Embryo		0.447	**0.038**	**0.003**	**0.012**	**0.014**
Late-Stage Embryo	0.00324		0.120	**0.016**	**0.043**	**0.041**
Hatchling	0.01047	0.007		0.589	0.976	0.901
Juvenile	0.01331	0.010	0.003		0.421	0.377
Sub-Adult	0.01033	0.007	0.000	0.003		0.922
Adult	0.00997	0.00673	0.00050	0.00334	0.00036	
Procrustes Variance	0.00353	0.00678	0.01400	0.01684	0.01386	0.01350

Table S5. Results of pairwise comparison of shape disparity among different ontogenetic periods, excluding *Gavialis*. Procrustes variances were calculated to estimate disparity, revealing that mid-skeletal stage embryos have significantly reduced skull shape variance relative to all other periods except late-stage embryos.

Table S6. Specimens within CER

Specimens within CER	Species	Ecomorph
NHM 1898_10_11_1	*Caiman crocodilus*	Blunt
NHM 1898_10_11_2	*Caiman crocodilus*	Blunt
ZOT 001	*O. tetraspis*	Blunt
ZOT 002	*O. tetraspis*	Blunt
NHM 1953_1_11_30	*M. cataphractus*	Slender
NHM 1953_1_11_31	*M. cataphractus*	Slender
NHM 1953_1_11_32	*M. cataphractus*	Slender
NHM 1953_1_11_38	*M. cataphractus*	Slender
ZAM E40-1	*A. mississippiensis*	Moderate
ZAM E32-1	*A. mississippiensis*	Moderate
ZAM E37-1	*A. mississippiensis*	Moderate
ZAM E37-2	*A. mississippiensis*	Moderate
ZAM E42-2	*A. mississippiensis*	Moderate
ZAM E46-1	*A. mississippiensis*	Moderate
CUSC 1633b	*C. moreletii*	Moderate
CUSC 1647	*C. moreletii*	Moderate
CUSC 1633a	*C. moreletii*	Moderate
CUSC 1633d	*C. moreletii*	Moderate
CUSC 1633g	*C. moreletii*	Moderate
CUSC 1633e	*C. moreletii*	Moderate
CUSC 1633h	*C. moreletii*	Moderate
CUSC 1633i	*C. moreletii*	Moderate
CUSC 1633k	*C. moreletii*	Moderate
CUSC 1633l	*C. moreletii*	Moderate
UF 184602	*C. siamensis*	Moderate
UF 184604	*C. siamensis*	Moderate
UF 184605	*C. siamensis*	Moderate
UF 184606	*C. siamensis*	Moderate
UF 184607	*C. siamensis*	Moderate
P_palpebrosus_54D_30C	*P. palpebrosus*	Moderate
P_palpebrosus_54D_32C	*P. palpebrosus*	Moderate
Specimens outside of		
SAAF A11077	*G. gangeticus*	Slender

CUSC	Campbell Geology Museum, Clemson University
UF	University of Florida
BMNH	British Museum of Natural History, London
MCZ	Museum of Comparative Zoology, Harvard

Table S6. List of mid-skeletal period specimens that fall within the CER and which species and ecomorphs they represent. *Gavialis gangeticus* is the single mid-skeletal period embryo which did not overlap this region. Embryos were mostly from existing collections, but *Osteolaemus*, *Alligator*, and *Paleosuchus palpebrosus* were collected for this project and are listed with field ID numbers.

Table S7. Results of global comparison of allometry across species

Analysis of Variance

	Df	SS	MS	R sq	F	Z	Pr(>F)
Log(CS)	1	3.7103	3.7103	0.5148	1070.8728	75.5950	**0.0001**
Species	22	2.2558	0.1025	0.3130	29.5938	8.6230	**0.0001**
Log(CS):Species	21	0.3573	0.0170	0.0496	4.9101	4.0590	**0.0001**
Residuals	255	0.8835	0.0035				
Total	299	7.2069					

Homogeneity of Slope

	Df	SSE	SS	R sq	F	Z	Pr(>F)
Common Allometry	276	1.24077					
Group Allometries	255	0.88351	0.35726	0.049572	4.9101	3.8194	**0.01**

Table S7. Results of the Procrustes ANOVA testing whether multiple species specific allometric trends better explain shape data than a single trend for all species using permutation procedures to assess significance. Homogeneity of Slopes test demonstrated that species specific allometric trajectories were significantly different than parallel. These results demonstrate that species do differ in ontogenetic trajectory.

Table S8. Pairwise statistical comparisons of ontogeny

Results of pairwise comparisons of ontogenetic trajectories between species. The outputs of Procrustes ANOVA, Homogeneity of Slopes, and the differences in slope and intercept values of PC1 and 2 projections of the multivariate trajectories between species. Comparisons are broken up to those within the slender ecomorph, within the blunt ecomorph, between the species of Paleosuchus and the blunt ecomorph, and all other comparisons. Parenthetical letters designate the ecomorph of the species (B - blunt, M- moderate, S - slender). P-values were corrected using the Bonferroni correction (bold are significant comparisons). Blunt forms are nearly all indistinguishable in ontogenetic trajectory, but slender forms are nearly all significantly different.

comparisons within the slender ecomorph

	Analysis of Variance								Homogeneity of Slope											
C. novaeguineae vs.	Df	SS	MS	R sq	F	Z	Pr(>F)	Corrected P Value	Df	SS	MS	R sq	F	Z	Pr(>F)	Corrected P Value	PC1 slope diff.	PC2 slope diff.	PC1 int. diff.	PC2 int. diff.
G. gangeticus	1	0	0	0.39	46.17	12.15	0.00010	**0.02100**	26	0.21	0	0.05	6.44	4.59	0.01000	1.00	0.031	0.060	-0.294	-0.134
M. cataphractus	1	0	0	0.03	6.84	5.06	0.00010	**0.02100**	25	0.07	0	0.01	1.73	1.55	0.09000	1.00	-0.019	0.007	0.073	0.002
T. schlegelii	1	0	0	0.23	32.50	9.89	0.00010	**0.02100**	20	0.06	0	0.02	3.00	2.63	0.01000	1.00	0.014	0.021	-0.153	-0.030
G. gangeticus vs.																				
M. cataphractus	1	0	0	0.32	57.84	14.75	0.00010	**0.02100**	35	0.24	0	0.07	13.30	6.11	0.01000	1.00	-0.050	-0.054	0.366	0.135
T. schlegelii	1	0	0	0.26	22.66	9.82	0.00010	**0.02100**	30	0.22	0	0.05	4.70	3.38	0.01000	1.00	-0.017	-0.039	0.140	0.104
M. cataphractus vs.																				
T. schlegelii	1	0	0	0.09	21.12	9.48	0.00010	**0.02100**	29	0.08	0	0.03	6.42	4.26	0.01000	1.00	0.032	0.014	-0.226	-0.031
C. acutus vs.																				
C. novaeguineae	1	0	0	0.04	2.73	1.72	0.07650	1.00000	14	0.03	0	0.07	5.05	3.71	0.01000	1.00	-0.039	-0.020	0.246	0.117
G. gangeticus	1	0	0	0.47	38.81	11.62	0.00010	**0.02100**	24	0.20	0	0.02	1.81	1.58	0.13000	1.00	-0.008	0.040	-0.047	-0.016
M. cataphractus	1	0	0	0.04	7.63	4.20	0.00080	0.16800	23	0.06	0	0.04	8.00	4.81	0.01000	1.00	-0.058	-0.013	0.319	0.119
T. schlegelii	1	0	0	0.29	25.62	8.65	0.00010	**0.02100**	18	0.05	0	0.05	4.08	3.17	0.01000	1.00	-0.026	0.001	0.093	0.088

Crocodylus johnsoni and C. intermedium are also slender in our morphospace, but we lacked enough samples to calculate ontogenetic trajectories. No embryos were sampled for C. acutus.

comparisons within the blunt ecomorph

	Analysis of Variance								Homogeneity of Slope											
Caiman crocodilus vs.	Df	SS	MS	R sq	F	Z	Pr(>F)	Corrected P Value	Df	SS	MS	R sq	F	Z	Pr(>F)	Corrected P Value	PC1 slope diff.	PC2 slope diff.	PC1 int. diff.	PC2 int. diff.
Caiman latirostris	1	0	0	0.07	9.27	6.28	0.00010	**0.02100**	30	0.08	0	0.02	2.71	2.50	0.01000	1.00	0.010	-0.007	-0.010	0.035
Caiman yacare	1	0	0	0.02	2.24	2.00	0.02270	1.00000	25	0.07	0	0.01	1.34	1.35	0.14000	1.00	-0.004	0.010	0.040	-0.043
Melanosuchus niger	1	0	0	0.14	16.17	8.63	0.00010	**0.02100**	26	0.07	0	0.03	3.21	2.64	0.03000	1.00	0.005	0.057	0.064	-0.326
O. tetraspis	1	0	0	0.04	4.74	3.76	0.00090	0.18900	35	0.11	0	0.02	2.71	2.55	0.02000	1.00	0.013	-0.005	-0.027	0.019
Caiman latirostris vs.																				
Caiman yacare	1	0	0	0.06	3.59	2.65	0.00170	0.35700	11	0.03	0	0.03	2.16	2.13	0.01000	1.00	-0.014	0.017	0.050	-0.078
Melanosuchus niger	1	0	0	0.14	8.62	4.44	0.00060	0.12600	12	0.03	0	0.05	3.41	2.68	0.01000	1.00	-0.005	0.065	0.075	-0.362
O. tetraspis	1	0	0	0.05	4.15	3.24	0.00220	0.46200	21	0.08	0	0.02	1.65	1.72	0.05000	1.00	0.003	0.002	-0.017	-0.016
Caiman yacare vs.																				
Melanosuchus niger	1	0	0	0.27	8.73	3.94	0.00090	0.18900	7	0.02	0	0.10	3.06	2.47	0.01000	1.00	0.009	0.048	0.025	-0.284

Table S8. Pairwise statistical comparisons of ontogeny

	Df	SS	MS	R sq	F	Z	Pr(>F)	Corrected P Value	Df	SS	MS	R sq	F	Z	Pr(>F)	Corrected P Value	PC1 slope diff.	PC2 slope diff.	PC1 int. diff.	PC2 int. diff.
O. tetraspis	1	0	0	0.05	2.97	2.44	0.01170	1.00000	16	0.06	0	0.02	1.26	1.11	0.27000	1.00	0.016	-0.015	-0.067	0.062
Melanosuchus niger vs.																				
O. tetraspis	1	0	0	0.07	4.48	3.12	0.00560	1.00000	17	0.06	0	0.04	2.89	2.32	0.03000	1.00	0.008	-0.063	-0.092	0.346

No embryos were sampled for Melanosuchus niger.

comparisons between *Paleosuchus (moderate)* and blunt species

	Analysis of Variance								Homogeneity of Slope											
P. palpebrosus (M) *vs.*	Df	SS	MS	R sq	F	Z	Pr(>F)	Corrected P Value	Df	SS	MS	R sq	F	Z	Pr(>F)	Corrected P Value	PC1 slope diff.	PC2 slope diff.	PC1 int. diff.	PC2 int. diff.
Caiman crocodilus	1	0	0	0.07	9.58	6.15	0.00010	**0.02100**	33	0.10	0	0.04	6.37	4.58	0.01000	1.00	-0.024	-0.028	0.098	0.119
Caiman latirostris	1	0	0	0.14	12.87	6.00	0.00020	**0.04200**	19	0.06	0	0.06	5.31	3.67	0.01000	1.00	-0.034	-0.020	0.108	0.084
Caiman yacare	1	0	0	0.13	8.39	4.97	0.00010	**0.02100**	14	0.05	0	0.05	3.42	2.32	0.05000	1.00	-0.021	-0.037	0.058	0.162
Melanosuchus niger	1	0	0	0.19	14.78	5.83	0.00020	**0.04200**	15	0.05	0	0.07	4.99	3.49	0.01000	1.00	-0.030	-0.085	0.034	0.446
O. tetraspis	1	0	0	0.09	7.20	4.82	0.00060	0.12600	24	0.09	0	0.04	3.00	2.35	0.02000	1.00	-0.037	-0.022	0.125	0.100
P. trigonatus (M)	1	0	0	0.06	5.23	3.14	0.00790	1.00000	18	0.06	0	0.05	4.69	3.52	0.02000	1.00	0.012	0.041	-0.051	-0.168
P. trigonatus (M) *vs.*																				
Caiman crocodilus	1	0	0	0.07	9.83	6.57	0.00010	**0.02100**	29	0.08	0	0.02	3.16	2.94	0.01000	1.00	-0.012	0.013	0.047	-0.049
Caiman latirostris	1	0	0	0.21	20.35	7.03	0.00010	**0.02100**	15	0.04	0	0.05	4.65	3.66	0.01000	1.00	-0.022	0.020	0.058	-0.084
Caiman yacare	1	0	0	0.14	8.44	4.71	0.00010	**0.02100**	10	0.03	0	0.02	1.19	1.16	0.21000	1.00	-0.008	0.004	0.008	-0.006
Melanosuchus niger	1	0	0	0.36	21.10	6.42	0.00010	**0.02100**	11	0.03	0	0.05	2.91	2.57	0.02000	1.00	-0.017	-0.044	-0.017	0.278
O. tetraspis	1	0	0	0.06	5.51	3.82	0.00010	**0.02100**	20	0.07	0	0.04	3.21	2.77	0.01000	1.00	-0.025	0.019	0.075	-0.068

all other comparisons (B - blunt, M - moderate, S - slender)

	Analysis of Variance								Homogeneity of Slope											
A. mississippiensis (M) vs.	Df	SS	MS	R sq	F	Z	Pr(>F)	Corrected P Value	Df	SS	MS	R sq	F	Z	Pr(>F)	Corrected P Value	PC1 slope diff.	PC2 slope diff.	PC1 int. diff.	PC2 int. diff.
A. sinensis (M)	1	0	0	0.08	18.92	10.25	0.00010	**0.02100**	37	0.11	0.01	0.02	4.13	3.15	0.01000	1.00	-0.020	0.014	0.110	-0.097
C. acutus (S)	1	0	0	0	18.85	10.00	0.00010	**0.02100**	32	0.10	0	0	4.03	3.06	0.02000	1.00	0.018	0.029	-0.165	-0.138
C. moreletii (M)	1	0	0	0.03	6.92	4.93	0.00020	**0.04200**	46	0.16	0	0.02	6.69	4.83	0.01000	1.00	-0.018	-0.004	0.086	0.039
C. niloticus (M)	1	0	0	0.07	14.62	9.73	0.00010	**0.02100**	49	0.17	0	0.02	4.02	3.36	0.01000	1.00	0.008	0.020	-0.078	-0.090
C. novaeguineae (S)	1	0	0	0.06	10.94	6.91	0.00010	**0.02100**	34	0.11	0	0.02	4.41	3.15	0.01000	1.00	-0.021	0.009	0.081	-0.020
C. palustris (M)	1	0	0	0.05	8.62	6.19	0.00010	**0.02100**	31	0.10	0	0.01	2.28	2.14	0.05000	1.00	-0.001	0.020	0.014	-0.084
C. porosus (M)	1	0	0	0.08	20.71	11.89	0.00010	**0.02100**	46	0.12	0	0.02	5.86	4.25	0.01000	1.00	0.019	0.022	-0.142	-0.092
C. rhombifer (M)	1	0	0	0.06	10.26	6.67	0.00010	**0.02100**	31	0.09	0	0.02	3.15	2.61	0.01000	1.00	-0.021	0.010	0.069	-0.046
C. siamensis (M)	1	0	0	0.03	7.09	5.10	0.00010	**0.02100**	41	0.13	0	0.02	5.50	4.32	0.01000	1.00	-0.010	0.012	0.033	-0.038
Caiman crocodilus (B)	1	0	0	0.08	18.45	11.37	0.00010	**0.02100**	48	0.14	0	0.02	4.42	3.77	0.01000	1.00	-0.017	-0.001	0.077	-0.011
Caiman latirostris (B)	1	0	0	0.11	21.27	11.56	0.00010	**0.02100**	34	0.11	0	0.01	1.89	1.61	0.08000	1.00	-0.007	-0.008	0.067	0.024
Caiman yacare (B)	1	0	0	0.05	7.34	5.23	0.00010	**0.02100**	29	0.09	0	0.02	2.58	2.25	0.02000	1.00	-0.020	0.009	0.116	-0.054

Table S8. Pairwise statistical comparisons of ontogeny

G. gangeticus (S)	1	1	1	0.45	138.84	21.74	0.00010	**0.02100**	44	0.27	0	0.05	15.43	7.28	0.01000	1.00	0.010	0.070	-0.213	-0.154
M. cataphractus (S)	1	0	0	0.10	33.45	12.92	0.00010	**0.02100**	43	0.13	0	0.05	17.03	7.36	0.01000	1.00	-0.039	0.016	0.154	-0.019
Melanosuchus niger (B)	1	0	0	0.10	16.25	8.96	0.00010	**0.02100**	30	0.09	0	0.02	2.72	2.61	0.01000	1.00	-0.011	0.057	0.141	-0.337
O. tetraspis (B)	1	0	0	0.05	9.75	6.91	0.00010	**0.02100**	39	0.14	0	0.01	2.61	1.96	0.07000	1.00	-0.004	-0.006	0.050	0.008
P. palpebrosus (M)	1	0	0	0.08	15.54	8.30	0.00010	**0.02100**	37	0.12	0	0.04	8.12	4.77	0.01000	1.00	-0.041	-0.028	0.175	0.109
P. trigonatus (M)	1	0	0	0.05	9.90	6.44	0.00010	**0.02100**	33	0.10	0	0.03	5.01	3.95	0.01000	1.00	-0.029	0.013	0.124	-0.060
T. schlegelii (S)	1	0	0	0.29	86.88	18.85	0.00010	**0.02100**	38	0.12	0	0.02	5.07	4.23	0.01000	1.00	-0.007	0.030	-0.072	-0.050
A. sinensis (M) vs.																				
C. acutus (S)	1	0	0	0.08	15.15	6.31	0.00010	**0.02100**	17	0.04	0	0.03	6.43	4.33	0.01000	1.00	0.038	0.016	-0.276	-0.041
C. moreletii (M)	1	0	0	0.16	27.63	11.07	0.00010	**0.02100**	31	0.09	0	0.05	7.83	5.22	0.01000	1.00	0.002	-0.018	-0.025	0.136
C. niloticus (M)	1	0	0	0.03	5.96	4.10	0.00050	0.10500	34	0.11	0	0.02	5.13	4.06	0.01000	1.00	0.028	0.006	-0.189	0.007
C. novaeguineae (S)	1	0	0	0.07	13.66	6.56	0.00010	**0.02100**	19	0.04	0	0.03	5.31	3.64	0.01000	1.00	-0.001	-0.004	-0.029	0.077
C. palustris (M)	1	0	0	0.03	4.30	2.97	0.00370	0.77700	16	0.04	0	0.03	3.43	2.89	0.01000	1.00	0.019	0.006	-0.096	0.013
C. porosus (M)	1	0	0	0.04	13.44	6.97	0.00010	**0.02100**	31	0.06	0	0.03	9.25	5.05	0.01000	1.00	0.039	0.008	-0.253	0.005
C. rhombifer (M)	1	0	0	0.07	10.03	5.36	0.00010	**0.02100**	16	0.03	0	0.03	4.32	3.20	0.01000	1.00	-0.002	-0.004	-0.041	0.051
C. siamensis (M)	1	0	0	0.12	19.76	9.00	0.00010	**0.02100**	26	0.07	0	0.04	7.02	4.54	0.01000	1.00	0.010	-0.002	-0.077	0.059
Caiman crocodilus (B)	1	0	0	0.04	6.52	4.92	0.00010	**0.02100**	33	0.08	0	0.02	3.61	3.07	0.01000	1.00	0.003	-0.014	-0.034	0.086
Caiman latirostris (B)	1	0	0	0.05	5.85	3.77	0.00030	0.06300	19	0.05	0	0.04	4.97	3.14	0.03000	1.00	0.013	-0.021	-0.044	0.121
Caiman yacare (B)	1	0	0	0.03	3.44	2.49	0.01180	1.00000	14	0.03	0	0.02	2.33	1.99	0.04000	1.00	-0.000	-0.005	0.006	0.044
G. gangeticus (S)	1	0	0	0.18	40.55	12.12	0.00010	**0.02100**	29	0.21	0	0.03	6.71	4.68	0.01000	1.00	0.030	0.056	-0.323	-0.057
M. cataphractus (S)	1	0	0	0.09	31.79	11.59	0.00010	**0.02100**	28	0.07	0	0.02	8.29	5.28	0.01000	1.00	-0.020	0.002	0.043	0.078
Melanosuchus niger (B)	1	0	0	0.06	6.82	4.36	0.00020	**0.04200**	15	0.03	0	0.02	2.30	1.97	0.05000	1.00	0.009	0.043	0.031	-0.240
O. tetraspis (B)	1	0	0	0.06	4.98	3.49	0.00140	0.29400	24	0.08	0	0.05	4.26	3.15	0.01000	1.00	0.016	-0.020	-0.061	0.105
P. palpebrosus (M)	1	0	0	0.12	13.77	6.55	0.00010	**0.02100**	22	0.06	0	0.08	9.09	4.93	0.01000	1.00	-0.021	-0.042	0.064	0.206
P. trigonatus (M)	1	0	0	0.06	9.11	5.46	0.00010	**0.02100**	18	0.04	0	0.02	2.94	2.51	0.02000	1.00	-0.009	-0.001	0.014	0.037
T. schlegelii (S)	1	0	0	0.14	47.72	12.01	0.00010	**0.02100**	23	0.06	0	0.01	3.98	2.91	0.01000	1.00	0.013	0.016	-0.183	0.047
C. acutus (S) vs.																				
C. moreletii (M)	1	0	0	0.04	7.19	4.79	0.00010	**0.02100**	26	0.08	0	0.02	4.43	3.66	0.01000	1.00	-0.036	-0.033	0.251	0.177
C. niloticus (M)	1	0	0	0.09	5.11	3.79	0.00240	0.50400	29	0.10	0	0.01	0.51	0.51	0.78000	1.00	-0.010	-0.009	0.087	0.048
C. palustris (M)	1	0	0	0.25	14.45	5.59	0.00010	**0.02100**	11	0.03	0	0.03	1.98	1.89	0.02000	1.00	-0.019	-0.009	0.180	0.053
C. porosus (M)	1	0	0	0.06	3.66	2.99	0.00440	0.92400	26	0.05	0	0.02	0.97	0.96	0.31000	1.00	0.000	-0.008	0.023	0.046
C. rhombifer (M)	1	0	0	0.11	6.09	3.35	0.00540	1.00000	11	0.02	0	0.06	3.19	2.56	0.03000	1.00	-0.040	-0.019	0.235	0.092
C. siamensis (M)	1	0	0	0.07	9.39	5.88	0.00010	**0.02100**	21	0.06	0	0.02	2.75	2.41	0.01000	1.00	-0.028	-0.018	0.199	0.099
Caiman crocodilus (B)	1	0	0	0.12	17.68	8.95	0.00010	**0.02100**	28	0.07	0	0.04	5.84	4.29	0.01000	1.00	-0.035	-0.030	0.242	0.127
Caiman latirostris (B)	1	0	0	0.35	37.87	8.31	0.00010	**0.02100**	14	0.04	0	0.04	3.81	2.85	0.01000	1.00	-0.025	-0.037	0.232	0.162
Caiman yacare (B)	1	0	0	0.33	16.70	5.21	0.00040	0.08400	9	0.02	0	0.05	2.66	2.14	0.02000	1.00	-0.039	-0.020	0.282	0.084

Table S8. Pairwise statistical comparisons of ontogeny

Melanosuchus niger (B)	1	0	0	0.56	30.30	6.45	0.00010	**0.02100**	10	0.02	0	0.07	3.59	3.04	0.01000	1.00	-0.030	0.028	0.307	-0.200
O. tetraspis (B)	1	0	0	0.13	13.58	6.91	0.00010	**0.02100**	19	0.07	0	0.03	3.11	2.64	0.01000	1.00	-0.022	-0.035	0.215	0.146
P. palpebrosus (M)	1	0	0	0.10	10.97	4.89	0.00010	**0.02100**	17	0.05	0	0.08	8.88	4.69	0.01000	1.00	-0.059	-0.057	0.340	0.246
P. trigonatus (M)	1	0	0	0.12	8.51	4.14	0.00020	**0.04200**	13	0.03	0	0.09	6.21	3.86	0.01000	1.00	-0.047	-0.017	0.290	0.078
C. moreletii (M) vs.																				
C. niloticus (M)	1	0	0	0.01	2.33	1.86	0.04590	1.00000	43	0.15	0	0.02	4.79	3.44	0.01000	1.00	0.026	0.024	-0.164	-0.129
C. novaeguineae	1	0	0	0.01	1.91	1.69	0.06710	1.00000	28	0.09	0	0.01	1.69	1.49	0.10000	1.00	-0.003	0.013	-0.005	-0.060
C. palustris (M)	1	0	0	0.01	1.55	1.24	0.18380	1.00000	25	0.08	0	0.02	3.60	2.82	0.02000	1.00	0.017	0.024	-0.071	-0.124
C. porosus (M)	1	0	0	0.01	3.44	2.48	0.01080	1.00000	40	0.11	0	0.03	8.52	5.29	0.01000	1.00	0.036	0.026	-0.228	-0.131
C. rhombifer (M)	1	0	0	0.03	4.51	3.58	0.00100	0.21000	25	0.08	0	0.01	1.91	1.73	0.05000	1.00	-0.004	0.014	-0.016	-0.085
C. siamensis (M)	1	0	0	0.02	3.38	2.91	0.00320	0.67200	35	0.11	0	0.01	1.95	1.64	0.06000	1.00	0.008	0.015	-0.052	-0.077
Caiman crocodilus (B)	1	0	0	0.06	13.56	8.35	0.00010	**0.02100**	42	0.13	0	0.02	5.76	4.61	0.01000	1.00	0.001	0.003	-0.009	-0.050
Caiman latirostris (B)	1	0	0	0.07	11.43	7.54	0.00010	**0.02100**	28	0.09	0	0.02	2.93	2.19	0.05000	1.00	0.011	-0.004	-0.019	-0.015
Caiman yacare (B)	1	0	0	0.04	4.72	3.71	0.00060	0.12600	23	0.08	0	0.01	1.98	1.84	0.07000	1.00	-0.002	0.013	0.031	-0.093
G. gangeticus (S)	1	0	0	0.17	47.77	14.81	0.00010	**0.02100**	38	0.26	0	0.05	12.53	5.93	0.01000	1.00	0.028	0.073	-0.298	-0.193
M. cataphractus (S)	1	0	0	0.02	7.28	5.10	0.00010	**0.02100**	37	0.12	0	0.02	5.30	4.09	0.01000	1.00	-0.022	0.020	0.068	-0.058
Melanosuchus niger (B)	1	0	0	0.08	12.53	7.13	0.00010	**0.02100**	24	0.08	0	0.02	3.71	3.04	0.01000	1.00	0.006	0.061	0.056	-0.377
O. tetraspis (B)	1	0	0	0.06	8.01	5.94	0.00010	**0.02100**	33	0.12	0	0.01	1.74	1.38	0.13000	1.00	0.014	-0.002	-0.036	-0.031
P. palpebrosus (M)	1	0	0	0.10	14.51	8.13	0.00010	**0.02100**	31	0.11	0	0.02	3.38	3.09	0.01000	1.00	-0.023	-0.024	0.089	0.069
P. trigonatus (M)	1	0	0	0.04	6.29	4.42	0.00010	**0.02100**	27	0.09	0	0.03	4.53	3.48	0.02000	1.00	-0.011	0.017	0.039	-0.099
T. schlegelii (S)	1	0	0	0.10	31.55	12.42	0.00010	**0.02100**	32	0.11	0	0.02	6.61	4.61	0.01000	1.00	0.010	0.034	-0.158	-0.089
C. niloticus (M) vs.																				
C. novaeguineae	1	0	0	0.04	3.60	2.69	0.01240	1.00000	31	0.10	0	0.04	3.63	2.85	0.01000	1.00	-0.029	-0.011	0.159	0.070
C. palustris (M)	1	0	0	0.06	4.10	3.26	0.00300	0.63000	28	0.10	0	0.02	1.10	0.95	0.27000	1.00	-0.009	0.000	0.093	0.006
C. porosus (M)	1	0	0	0.05	4.10	3.30	0.00320	0.67200	43	0.12	0	0.01	0.77	0.68	0.48000	1.00	0.010	0.002	-0.064	-0.002
C. rhombifer (M)	1	0	0	0.03	2.25	1.89	0.05370	1.00000	28	0.09	0	0.03	1.85	1.50	0.15000	1.00	-0.030	-0.010	0.148	0.044
C. siamensis (M)	1	0	0	0.02	2.68	2.28	0.01490	1.00000	38	0.13	0	0.01	2.36	2.16	0.03000	1.00	-0.019	-0.008	0.112	0.052
Caiman crocodilus (B)	1	0	0	0.04	6.96	5.08	0.00010	**0.02100**	45	0.14	0	0.03	5.29	3.94	0.01000	1.00	-0.025	-0.020	0.155	0.079
Caiman latirostris (B)	1	0	0	0.17	20.04	9.99	0.00010	**0.02100**	31	0.11	0	0.02	2.75	2.51	0.01000	1.00	-0.015	-0.028	0.145	0.114
Caiman yacare (B)	1	0	0	0.09	5.90	4.36	0.00080	0.16800	26	0.09	0	0.03	1.67	1.25	0.19000	1.00	-0.029	-0.011	0.195	0.036
G. gangeticus (S)	1	1	1	0.64	118.78	20.37	0.00010	**0.02100**	41	0.27	0	0.03	4.65	3.74	0.01000	1.00	0.002	0.050	-0.134	-0.064
M. cataphractus (S)	1	0	0	0.10	20.35	10.22	0.00010	**0.02100**	40	0.13	0	0.05	8.87	5.49	0.01000	1.00	-0.048	-0.004	0.232	0.071
Melanosuchus niger (B)	1	0	0	0.33	21.16	10.54	0.00010	**0.02100**	27	0.09	0	0.04	2.43	2.02	0.05000	1.00	-0.020	0.037	0.220	-0.247
O. tetraspis (B)	1	0	0	0.05	7.65	5.56	0.00010	**0.02100**	36	0.14	0	0.02	2.78	2.32	0.02000	1.00	-0.012	-0.026	0.128	0.098
P. palpebrosus (M)	1	0	0	0.06	8.41	5.22	0.00010	**0.02100**	34	0.12	0	0.05	7.97	4.83	0.01000	1.00	-0.049	-0.048	0.253	0.198
P. trigonatus (M)	1	0	0	0.08	7.17	4.79	0.00020	**0.04200**	30	0.10	0	0.05	4.64	3.23	0.02000	1.00	-0.037	-0.007	0.203	0.030

Table S8. Pairwise statistical comparisons of ontogeny

T. schlegelii (S)	1	0	0	0.39	50.06	15.82	0.00010	**0.02100**	35	0.12	0	0.03	3.83	3.60	0.01000	1.00	-0.016	0.010	0.006	0.040
C. novaeguineae (S) vs.																				
C. palustris (M)	1	0	0	0.10	8.38	4.62	0.00010	**0.02100**	13	0.03	0	0.03	2.31	2.00	0.03000	1.00	0.020	0.011	-0.067	-0.064
C. porosus (M)	1	0	0	0.01	1.31	0.89	0.34060	1.00000	28	0.06	0	0.07	8.69	4.97	0.01000	1.00	0.039	0.013	-0.223	-0.072
C. rhombifer (M)	1	0	0	0.06	5.14	3.75	0.00010	**0.02100**	13	0.03	0	0.02	1.55	1.55	0.10000	1.00	-0.001	0.001	-0.012	-0.026
C. siamensis (M)	1	0	0	0.02	3.60	2.91	0.00060	0.12600	23	0.06	0	0.02	2.47	2.15	0.02000	1.00	0.011	0.002	-0.047	-0.018
Caiman crocodilus (B)	1	0	0	0.09	15.47	8.90	0.00010	**0.02100**	30	0.08	0	0.02	3.25	2.67	0.01000	1.00	0.004	-0.010	-0.004	0.009
Caiman latirostris (B)	1	0	0	0.23	29.15	8.27	0.00010	**0.02100**	16	0.04	0	0.03	4.11	3.40	0.01000	1.00	0.014	-0.017	-0.014	0.045
Caiman yacare (B)	1	0	0	0.15	12.51	5.49	0.00010	**0.02100**	11	0.03	0	0.02	1.46	1.55	0.04000	1.00	0.001	-0.000	0.036	-0.033
Melanosuchus niger (B)	1	0	0	0.36	31.10	7.23	0.00010	**0.02100**	12	0.03	0	0.05	3.98	2.95	0.02000	1.00	0.010	0.048	0.060	-0.317
O. tetraspis (B)	1	0	0	0.08	8.76	5.84	0.00010	**0.02100**	21	0.07	0	0.02	1.65	1.61	0.06000	1.00	0.017	-0.015	-0.031	0.029
P. palpebrosus (M)	1	0	0	0.10	12.38	6.13	0.00010	**0.02100**	19	0.06	0	0.03	3.70	2.67	0.02000	1.00	-0.020	-0.037	0.094	0.129
P. trigonatus (M)	1	0	0	0.08	7.29	4.65	0.00010	**0.02100**	15	0.04	0	0.03	2.80	2.21	0.03000	1.00	-0.008	0.004	0.043	-0.039
C. palustris (M) vs.																				
C. porosus (M)	1	0	0	0.09	8.45	5.36	0.00010	**0.02100**	25	0.05	0	0.04	3.59	2.95	0.01000	1.00	0.019	0.002	-0.157	-0.007
C. rhombifer (M)	1	0	0	0.14	8.35	4.32	0.00020	**0.04200**	10	0.02	0	0.04	2.36	2.23	0.01000	1.00	-0.021	-0.010	0.055	0.038
C. siamensis (M)	1	0	0	0.03	3.86	3.06	0.00080	0.16800	20	0.05	0	0.02	2.12	1.86	0.01000	1.00	-0.009	-0.009	0.019	0.046
Caiman crocodilus (B)	1	0	0	0.05	6.23	4.60	0.00010	**0.02100**	27	0.07	0	0.03	3.26	2.70	0.01000	1.00	-0.016	-0.021	0.063	0.074
Caiman latirostris (B)	1	0	0	0.11	8.72	4.80	0.00010	**0.02100**	13	0.04	0	0.03	2.70	2.42	0.02000	1.00	-0.006	-0.028	0.052	0.109
Caiman yacare (B)	1	0	0	0.08	3.84	2.96	0.00040	0.08400	8	0.02	0	0.03	1.40	1.52	0.09000	1.00	-0.019	-0.011	0.102	0.031
G. gangeticus (S)	1	0	0	0.48	44.13	11.18	0.00010	**0.02100**	23	0.20	0	0.04	3.90	3.11	0.02000	1.00	0.011	0.049	-0.227	-0.069
M. cataphractus (S)	1	0	0	0.11	21.83	8.52	0.00010	**0.02100**	22	0.06	0	0.03	5.83	4.09	0.01000	1.00	-0.039	-0.004	0.139	0.066
Melanosuchus niger (B)	1	0	0	0.26	13.49	5.19	0.00010	**0.02100**	9	0.02	0	0.06	3.13	2.62	0.02000	1.00	-0.010	0.037	0.127	-0.253
O. tetraspis (B)	1	0	0	0.04	3.18	2.64	0.00720	1.00000	18	0.07	0	0.03	1.95	1.78	0.05000	1.00	-0.003	-0.026	0.035	0.093
**P. palpebrosus (M)*	1	0	0	0.11	9.29	4.38	0.00030	*0.06300*	16	0.05	0	0.08	7.03	4.57	0.01000	1.00	-0.040	-0.048	0.160	0.193
P. trigonatus (M)	1	0	0	0.15	10.69	5.14	0.00020	**0.04200**	12	0.03	0	0.04	2.68	2.51	0.01000	1.00	-0.028	-0.007	0.110	0.025
T. schlegelii (S)	1	0	0	0.37	44.56	9.77	0.00010	**0.02100**	17	0.05	0	0.02	1.90	1.76	0.04000	1.00	-0.006	0.010	-0.087	0.034
C. porosus (M) vs.																				
C. rhombifer (M)	1	0	0	0.05	4.38	3.05	0.00400	0.84000	25	0.05	0	0.06	5.17	3.93	0.01000	1.00	-0.040	-0.012	0.211	0.046
C. siamensis (M)	1	0	0	0.02	5.45	4.03	0.00010	**0.02100**	35	0.08	0	0.02	5.44	4.08	0.01000	1.00	-0.029	-0.010	0.176	0.054
Caiman crocodilus (B)	1	0	0	0.07	16.21	9.39	0.00010	**0.02100**	42	0.10	0	0.04	8.79	5.82	0.01000	1.00	-0.035	-0.022	0.219	0.081
Caiman latirostris (B)	1	0	0	0.24	39.51	12.78	0.00010	**0.02100**	28	0.06	0	0.03	4.89	3.92	0.01000	1.00	-0.025	-0.029	0.209	0.116
Caiman yacare (B)	1	0	0	0.16	13.51	7.02	0.00010	**0.02100**	23	0.05	0	0.05	4.51	3.55	0.01000	1.00	-0.039	-0.013	0.259	0.038
G. gangeticus (S)	1	1	1	0.66	119.90	19.61	0.00010	**0.02100**	38	0.23	0	0.02	4.48	3.05	0.01000	1.00	-0.009	0.048	-0.070	-0.062
M. cataphractus (S)	1	0	0	0.09	21.34	9.24	0.00010	**0.02100**	37	0.09	0	0.07	16.40	6.36	0.01000	1.00	-0.058	-0.006	0.296	0.073
Melanosuchus niger (B)	1	0	0	0.45	39.58	12.10	0.00010	**0.02100**	24	0.05	0	0.04	3.81	3.27	0.01000	1.00	-0.030	0.035	0.283	-0.245

Table S8. Pairwise statistical comparisons of ontogeny

O. tetraspis (B)	1	0	0	0.07	13.01	7.78	0.00010	**0.02100**	33	0.09	0	0.03	5.00	4.08	0.01000	1.00	-0.022	-0.028	0.192	0.100
P. palpebrosus (M)	1	0	0	0.07	13.12	6.39	0.00010	**0.02100**	31	0.08	0	0.07	13.55	6.33	0.01000	1.00	-0.060	-0.050	0.317	0.200
P. trigonatus (M)	1	0	0	0.07	7.65	4.38	0.00020	**0.04200**	27	0.06	0	0.09	10.25	5.85	0.01000	1.00	-0.047	-0.009	0.266	0.032
T. schlegelii (S)	1	0	0	0.41	61.19	15.39	0.00010	**0.02100**	32	0.07	0	0.05	6.98	5.10	0.01000	1.00	-0.026	0.008	0.070	0.042
C. rhombifer (M) vs.																				
C. siamensis (M)	1	0	0	0.02	2.94	2.47	0.00360	0.75600	20	0.05	0	0.02	1.96	1.92	0.04000	1.00	0.011	0.002	-0.036	0.008
Caiman crocodilus (B)	1	0	0	0.06	7.18	5.20	0.00010	**0.02100**	27	0.07	0	0.02	2.31	2.01	0.03000	1.00	0.005	-0.010	0.008	0.035
Caiman latirostris (B)	1	0	0	0.22	19.15	6.58	0.00010	**0.02100**	13	0.03	0	0.03	2.83	2.12	0.02000	1.00	0.015	-0.018	-0.002	0.070
Caiman yacare (B)	1	0	0	0.22	12.51	4.84	0.00010	**0.02100**	8	0.02	0	0.02	0.93	0.98	0.33000	1.00	0.001	-0.001	0.047	-0.007
G. gangeticus (S)	1	0	0	0.31	28.76	9.99	0.00010	**0.02100**	23	0.20	0	0.03	2.98	2.15	0.03000	1.00	0.032	0.060	-0.282	-0.108
M. cataphractus (S)	1	0	0	0.07	13.11	7.20	0.00010	**0.02100**	22	0.06	0	0.01	2.50	2.17	0.03000	1.00	-0.018	0.006	0.084	0.027
Melanosuchus niger (B)	1	0	0	0.36	20.03	5.56	0.00010	**0.02100**	9	0.02	0	0.08	4.63	2.96	0.01000	1.00	0.010	0.047	0.072	-0.291
O. tetraspis (B)	1	0	0	0.10	7.08	4.76	0.00020	**0.04200**	18	0.06	0	0.02	1.48	1.29	0.15000	1.00	0.018	-0.016	-0.020	0.054
P. palpebrosus (M)	1	0	0	0.09	7.26	4.24	0.00030	0.06300	16	0.05	0	0.05	3.93	3.28	0.01000	1.00	-0.019	-0.038	0.106	0.155
P. trigonatus (M)	1	0	0	0.13	9.22	4.79	0.00020	**0.04200**	12	0.03	0	0.04	3.04	2.43	0.02000	1.00	-0.007	0.003	0.055	-0.014
T. schlegelii (S)	1	0	0	0.23	29.11	8.72	0.00010	**0.02100**	17	0.04	0	0.03	3.41	2.80	0.01000	1.00	0.014	0.020	-0.141	-0.004
C. siamensis (M) vs.																				
Caiman crocodilus (B)	1	0	0	0.06	10.88	7.10	0.00010	**0.02100**	37	0.10	0	0.04	6.79	4.96	0.01000	1.00	-0.007	-0.012	0.043	0.027
Caiman latirostris (B)	1	0	0	0.13	17.84	8.76	0.00010	**0.02100**	23	0.07	0	0.02	3.23	2.93	0.01000	1.00	0.004	-0.019	0.033	0.062
Caiman yacare (B)	1	0	0	0.08	8.84	5.73	0.00010	**0.02100**	18	0.05	0	0.02	2.06	1.81	0.04000	1.00	-0.010	-0.003	0.083	-0.015
G. gangeticus (S)	1	0	0	0.26	51.75	14.38	0.00010	**0.02100**	33	0.23	0	0.04	8.03	5.30	0.01000	1.00	0.020	0.058	-0.246	-0.116
M. cataphractus (S)	1	0	0	0.04	11.81	6.86	0.00010	**0.02100**	32	0.09	0	0.03	7.33	5.40	0.01000	1.00	-0.029	0.004	0.120	0.020
Melanosuchus niger (B)	1	0	0	0.16	18.93	8.24	0.00010	**0.02100**	19	0.05	0	0.03	3.83	3.04	0.01000	1.00	-0.001	0.045	0.108	-0.299
O. tetraspis (B)	1	0	0	0.08	8.76	6.20	0.00010	**0.02100**	28	0.10	0	0.02	1.92	1.80	0.04000	1.00	0.006	-0.018	0.016	0.046
P. palpebrosus (M)	1	0	0	0.09	11.61	6.46	0.00010	**0.02100**	26	0.08	0	0.05	6.54	4.44	0.01000	1.00	-0.031	-0.040	0.141	0.147
P. trigonatus (M)	1	0	0	0.06	8.46	5.28	0.00010	**0.02100**	22	0.06	0	0.04	5.39	4.03	0.01000	1.00	-0.019	0.001	0.091	-0.022
T. schlegelii (S)	1	0	0	0.16	39.16	12.45	0.00010	**0.02100**	27	0.08	0	0.02	4.79	3.71	0.01000	1.00	0.003	0.018	-0.106	-0.012
Caiman crocodilus (B) vs.																				
G. gangeticus (S)	1	1	1	0.36	97.82	18.67	0.00010	**0.02100**	40	0.25	0	0.05	12.60	6.43	0.01000	1.00	0.027	0.070	-0.289	-0.143
M. cataphractus (S)	1	0	0	0.13	40.50	14.84	0.00010	**0.02100**	39	0.11	0	0.03	8.69	5.48	0.01000	1.00	-0.023	0.017	0.077	-0.008
T. schlegelii (S)	1	0	0	0.26	70.94	17.23	0.00010	**0.02100**	34	0.09	0	0.02	5.34	4.14	0.01000	1.00	0.009	0.031	-0.149	-0.039
Caiman latirostris (B) vs.																				
G. gangeticus (S)	1	1	1	0.46	68.18	13.42	0.00010	**0.02100**	26	0.21	0	0.05	7.03	4.48	0.01000	1.00	0.017	0.077	-0.279	-0.178
M. cataphractus (S)	1	0	0	0.21	53.88	11.96	0.00010	**0.02100**	25	0.07	0	0.03	8.63	4.93	0.01000	1.00	-0.033	0.024	0.087	-0.043
T. schlegelii (S)	1	0	0	0.41	82.39	11.53	0.00010	**0.02100**	20	0.06	0	0.03	5.97	4.04	0.01000	1.00	-0.001	0.038	-0.139	-0.074
Caiman yacare (B) vs.																				

Table S8. Pairwise statistical comparisons of ontogeny

G. gangeticus (S)	1	0	0	0.45	33.32	10.17	0.00010	**0.02100**	21	0.20	0	0.03	2.59	2.00	0.06000	1.00	0.030	0.061	-0.329	-0.100
M. cataphractus (S)	1	0	0	0.13	22.67	9.34	0.00010	**0.02100**	20	0.06	0	0.01	2.21	1.65	0.10000	1.00	-0.019	0.007	0.037	0.035
T. schlegelii (S)	1	0	0	0.38	41.44	8.88	0.00010	**0.02100**	15	0.04	0	0.02	2.48	2.13	0.02000	1.00	0.013	0.021	-0.189	0.003
G. gangeticus (S) vs.																				
Melanosuchus niger (B)	1	1	1	0.66	59.86	12.30	0.00010	**0.02100**	22	0.20	0	0.01	1.15	0.90	0.27000	1.00	-0.021	-0.013	0.354	-0.184
O. tetraspis (B)	1	0	0	0.26	52.31	14.14	0.00010	**0.02100**	31	0.24	0	0.03	6.83	4.44	0.01000	1.00	-0.014	-0.075	0.262	0.162
P. palpebrosus (M)	1	0	0	0.20	35.42	11.64	0.00010	**0.02100**	29	0.23	0	0.05	8.39	4.96	0.01000	1.00	-0.051	-0.098	0.387	0.262
P. trigonatus (M)	1	0	0	0.36	41.32	11.42	0.00010	**0.02100**	25	0.21	0	0.05	5.52	4.10	0.01000	1.00	-0.039	-0.057	0.337	0.094
M. cataphractus (S) vs.																				
Melanosuchus niger (B)	1	0	0	0.32	64.32	12.04	0.00010	**0.02100**	21	0.06	0	0.02	3.93	2.88	0.03000	1.00	0.028	0.041	-0.012	-0.319
O. tetraspis (B)	1	0	0	0.10	23.33	10.57	0.00010	**0.02100**	30	0.10	0	0.02	4.95	3.87	0.01000	1.00	0.036	-0.022	-0.104	0.027
P. palpebrosus (M)	1	0	0	0.10	25.92	10.40	0.00010	**0.02100**	28	0.09	0	0.02	4.22	3.50	0.01000	1.00	-0.001	-0.044	0.021	0.127
P. trigonatus (M)	1	0	0	0.08	17.46	8.75	0.00010	**0.02100**	24	0.07	0	0.02	3.60	3.05	0.01000	1.00	0.011	-0.003	-0.029	-0.041
T. schlegelii (S) vs.																				
Melanosuchus niger (B)	1	0	0	0.63	69.87	10.33	0.00010	**0.02100**	16	0.04	0	0.02	2.71	2.13	0.05000	1.00	0.004	-0.027	-0.213	0.287
O. tetraspis (B)	1	0	0	0.21	46.20	12.77	0.00010	**0.02100**	25	0.09	0	0.02	3.64	2.96	0.01000	1.00	-0.004	0.036	-0.122	-0.058
P. palpebrosus (M)	1	0	0	0.16	34.28	10.49	0.00010	**0.02100**	23	0.07	0	0.04	8.32	5.34	0.01000	1.00	0.034	0.058	-0.247	-0.159
P. trigonatus (M)	1	0	0	0.26	37.16	10.13	0.00010	**0.02100**	19	0.05	0	0.03	3.68	2.99	0.01000	1.00	0.021	0.017	-0.196	0.010

Table S9. PC1 & 2 ontogenetic trajectory coefficients for extant crocodylians

	PC1 Slope			PC1 Elevation			PC2 Slope			PC2 Elevation		
	PC1 Slope	95% CI max	95% CI min	PC1 Elevation	95% CI max	95% CI min	PC2 Slope	95% CI max	95% CI min	PC2 Elevation	95% CI max	95% CI min
P. trigonatus	0.10098	0.11449	0.05877	-0.00912	0.01233	-0.02202	0.03152	0.03717	0.01261	0.02553	0.03605	0.01962
P. palpebrosus	0.11328	0.13485	0.10096	-0.08795	-0.07799	-0.09602	0.07245	0.09832	0.04976	0.00606	0.01927	-0.00422
Caiman crocodilus	0.08898	0.09911	0.07837	-0.04729	-0.03907	-0.05540	0.04488	0.05202	0.03730	0.03144	0.03713	0.02617
Caiman yacare	0.09253	0.10011	-0.10894	0.00095	0.08469	-0.00955	0.03533	0.03923	-0.04212	0.05574	0.08695	0.05115
Caiman latirostris	0.07885	0.09178	0.02602	-0.06072	-0.02858	-0.07264	0.05201	0.05939	0.03700	0.04667	0.05692	0.03724
A. sinensis	0.09219	0.21552	0.08463	-0.14268	-0.10249	-0.15261	0.03055	0.05761	0.02775	0.02384	0.03313	0.01996
A. mississippiensis	0.07235	0.07987	0.06434	-0.03536	-0.02503	-0.04443	0.04422	0.05126	0.03583	0.02628	0.03546	0.01767
C. novaeguineae	0.09316	0.10271	0.07475	0.01638	0.03644	0.00254	0.03503	0.04315	0.01786	0.01193	0.02340	0.00425
C. porosus	0.05366	0.06534	0.02821	0.07533	0.08346	0.06749	0.02252	0.02959	0.01222	0.03606	0.04160	0.03118
C. siamensis	0.08243	0.09408	0.07569	-0.06290	-0.05371	-0.07035	0.03264	0.03718	0.02821	-0.01053	-0.00512	-0.01511
C. palustris	0.07316	0.10744	0.06681	0.00607	0.01443	-0.01862	0.02405	0.04051	0.01124	0.02752	0.03899	0.01170
C. niloticus	0.06387	0.07530	0.02941	0.06647	0.07780	0.05814	0.02443	0.03323	0.01073	0.04294	0.04993	0.03608
C. rhombifer	0.09384	0.13963	0.07564	-0.00011	0.02636	-0.01435	0.03441	0.04252	0.02927	0.02282	0.02759	0.01890
C. moreletii	0.09008	0.11069	0.07749	-0.12161	-0.11126	-0.13101	0.04807	0.05929	0.04253	-0.04125	-0.03085	-0.04971
M. cataphractus	0.11179	0.11954	0.09425	0.05405	0.07152	0.04167	0.02821	0.03291	0.02084	-0.02266	-0.01563	-0.02814
O. tetraspis	0.07606	0.09788	0.06135	-0.11486	-0.09983	-0.12726	0.05018	0.06458	0.03905	0.01572	0.02630	0.00521
T. schlegelii	0.07965	0.09592	0.03803	0.13057	0.15615	0.11607	0.01414	0.01965	0.00684	-0.06279	-0.05697	-0.06902
G. gangeticus	0.06218	0.09084	-0.00334	0.18248	0.21912	0.15519	-0.02530	0.00178	-0.04428	-0.18790	-0.17359	-0.20534

Table S9. Ontogenetic trajectory variables (slope and elevation) for PCs 1 and 2 for the eighteen (18) species for which embryos or hatchlings were sampled. Values were derived from linear regression of PC scores on centroid size while 95% confidence interval upper and lower bounds were generated using resampling within species.

Table S10. Ancestral state reconstructions of PC1 & 2 ontogenetic trajectory coefficients

Molecular Topology

	Node	PC1 Intercept	PC1 Slope	PC2 Intercept	PC2 Slope
1g	Crocodylia	-0.42186	0.08422	-0.15247	0.03029
2g	Alligatoridae	-0.44901	0.08637	-0.16137	0.03624
3g	*Alligator*	-0.44939	0.08459	-0.15415	0.03674
4g	Caimaninae	-0.49846	0.09429	-0.19374	0.04615
5g	*Caiman*	-0.48168	0.08703	-0.18765	0.04554
6g		-0.48899	0.08985	-0.16765	0.04144
7g	*Paleosuchus*	-0.53360	0.10416	-0.21219	0.05064
8g		-0.38099	0.08098	-0.13907	0.02133
9g	**Gavialidae**	-0.28710	0.07364	-0.10428	0.00170
10g	Crocodylidae/ Crocodylinae	-0.43760	0.08536	-0.16179	0.03276
11g	**Mec. + Osteo.**	-0.45704	0.08820	-0.17053	0.03489
12g	*Crocodylus*	-0.40865	0.07983	-0.14786	0.03131
13g		-0.39927	0.07799	-0.14402	0.03081
14g		-0.38598	0.07521	-0.13717	0.02945
15g		-0.40199	0.07648	-0.13466	0.02891
16g		-0.40249	0.07903	-0.14876	0.03254
17g		-0.44874	0.08764	-0.17613	0.03833

Morphology Topology

	Node	PC1 Intercept	PC1 Slope	PC2 Intercept	PC2 Slope
1m	Crocodylia	-0.29895	0.07236	-0.10390	0.00429
2m	**Brevirostres**	-0.36681	0.07827	-0.14126	0.02147
3m	Alligatoridae	-0.43637	0.08230	-0.17603	0.03987
4m	*Alligator*	-0.42451	0.07810	-0.17016	0.04065
5m	Caimaninae	-0.46424	0.08656	-0.18991	0.04431
6m	*Caiman*	-0.47024	0.08275	-0.19965	0.04811
7m		-0.48902	0.08987	-0.16544	0.04099
8m	*Paleosuchus*	-0.54212	0.10660	-0.21703	0.05179
9m	**Crocodylidae**	-0.37655	0.08059	-0.14918	0.02335
10m	Crocodylinae	-0.42838	0.08350	-0.16134	0.03239
11m		-0.44036	0.08695	-0.15195	0.02947
12m	*Crocodylus*	-0.37386	0.07247	-0.12367	0.02692
13m		-0.37626	0.07181	-0.12075	0.02627
14m		-0.36228	0.07048	-0.12373	0.02674
15m		-0.30798	0.06305	-0.11713	0.02531
16m		-0.34690	0.06895	-0.12007	0.02735
17m		-0.44277	0.08574	-0.18312	0.03948

Table S10. Reconstructed values for ontogenetic trajectory coefficients (intercept and slope) for PCs 1 and 2 at ancestral nodes in both the molecular and morphological topologies based on maximum likelihood estimation for continuous variables. Node numbers are those in figure S4 and have been approximately matched with equivalent nodes from the opposing phylogeny. Bold nodes have no real equivalent in the opposing tree.

Table S11. Elevations for ancestral PC1 & 2 ontogenetic trajectories - Molecular

Ancestral PC1 Ontogeny Elevations - Molecular

	95% CI max	95% CI min	1g	2g	3g	4g	5g	6g	7g	8g	9g	10g	11g	12g	13g	14g	15g	16g	17g
P. trigonatus	0.01233	-0.02202	0.00330	-0.01298	-	-0.02246	-	-	-0.00775	-	-	-	-	-	-	-	-	-	-
P. palpebrosus	-0.07799	-0.09602	-0.06392	-0.08192	-	-0.09772	-	-	-0.09089	-	-	-	-	-	-	-	-	-	-
Caiman crocodilus	-0.03907	-0.05540	-0.02031	-0.03720	-	-0.04890	-0.06670	-0.06061	-	-	-	-	-	-	-	-	-	-	-
Caiman yacare	0.08469	-0.00955	0.04424	0.02901	-	0.02338	0.00001	0.00826	-	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	-0.02858	-0.07264	0.00611	-0.01010	-	-0.01932	-0.03940	-	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	-0.10249	-0.15261	-0.09081	-0.10950	-0.11690	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	-0.02503	-0.04443	-0.00357	-0.02003	-0.02928	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	0.03644	0.00254	0.02295	-	-	-	-	-	-	0.04670	-	0.01322	-	0.01298	-	-	-	-	-
C. porosus	0.08346	0.06749	0.09259	-	-	-	-	-	-	0.11367	-	0.08380	-	0.07899	0.07712	0.07342	-	-	-
C. siamensis	-0.05371	-0.07035	-0.04866	-	-	-	-	-	-	-0.02215	-	-0.05936	-	-0.05490	-0.05369	-0.05272	-0.06310	-	-
C. palustris	0.01443	-0.01862	0.05595	-	-	-	-	-	-	0.07843	-	0.04666	-	0.04426	0.04318	0.04070	0.03190	-	-
C. niloticus	0.07780	0.05814	0.08267	-	-	-	-	-	-	0.10413	-	0.07375	-	0.06959	0.06793	-	-	0.07097	-
C. rhombifer	0.02636	-0.01435	-0.00575	-	-	-	-	-	-	0.01912	-	-0.01586	-	-0.01422	-0.01395	-	-	-0.01200	-0.01574
C. moreletii	-0.11126	-0.13101	-0.08661	-	-	-	-	-	-	-0.05863	-	-0.09782	-	-0.09087	-0.08883	-	-	-0.08788	-0.09988
M. cataphractus	0.07152	0.04167	0.03184	-	-	-	-	-	-	0.05526	-	0.02223	0.01810	-	-	-	-	-	-
O. tetraspis	-0.09983	-0.12726	-0.05709	-	-	-	-	-	-	-0.03026	-	-0.06791	-0.07504	-	-	-	-	-	-
T. schlegelii	0.15615	0.11607	0.05713	-	-	-	-	-	-	0.07957	0.13172	-	-	-	-	-	-	-	-
G. gangeticus	0.21912	0.15519	0.07191	-	-	-	-	-	-	0.09378	0.14464	-	-	-	-	-	-	-	-

Ancestral PC2 Ontogeny Elevations - Molecular

	95% CI max	95% CI min	1g	2g	3g	4g	5g	6g	7g	8g	9g	10g	11g	12g	13g	14g	15g	16g	17g
P. trigonatus	0.03605	0.01962	0.00043	0.02156	-	0.03925	-	-	0.04344	-	-	-	-	-	-	-	-	-	-
P. palpebrosus	0.01927	-0.00422	-0.02375	-0.00736	-	0.00242	-	-	0.00303	-	-	-	-	-	-	-	-	-	-
Caiman crocodilus	0.03713	0.02617	-0.00807	0.01140	-	0.02631	0.02949	0.02991	-	-	-	-	-	-	-	-	-	-	-
Caiman yacare	0.08695	0.05115	0.01515	0.03917	-	0.06169	0.06440	0.06167	-	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	0.05692	0.03724	0.00143	0.02277	-	0.04079	0.04378	-	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	0.03313	0.01996	-0.03342	-0.01894	-0.00975	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	0.03546	0.01767	-0.00205	0.01860	0.02831	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	0.02340	0.00425	0.00749	-	-	-	-	-	-	-0.02642	-	0.01123	-	0.01752	-	-	-	-	-
C. porosus	0.04160	0.03118	0.03253	-	-	-	-	-	-	-0.00878	-	0.03832	-	0.04341	0.04417	0.04273	-	-	-
C. siamensis	-0.00512	-0.01511	-0.01826	-	-	-	-	-	-	-0.04456	-	-0.01663	-	-0.00911	-0.00750	-0.00667	-0.00656	-	-
C. palustris	0.03899	0.01170	0.01936	-	-	-	-	-	-	-0.01806	-	0.02406	-	0.02979	0.03076	0.02991	0.02935	-	-
C. niloticus	0.04993	0.03608	0.02897	-	-	-	-	-	-	-0.01129	-	0.03446	-	0.03972	0.04054	-	-	0.04620	-
C. rhombifer	0.02759	0.01890	-0.00283	-	-	-	-	-	-	-0.03369	-	0.00007	-	0.00685	0.00820	-	-	0.01203	0.01325
C. moreletii	-0.03085	-0.04971	-0.03191	-	-	-	-	-	-	-0.05416	-	-0.03139	-	-0.02321	-0.02138	-	-	-0.01922	-0.02355
M. cataphractus	-0.01563	-0.02814	0.01069	-	-	-	-	-	-	-0.02417	-	0.01469	0.01745	-	-	-	-	-	-
O. tetraspis	0.02630	0.00521	-0.02130	-	-	-	-	-	-	-0.04669	-	-0.01991	-0.01940	-	-	-	-	-	-
T. schlegelii	-0.05697	-0.06902	0.01978	-	-	-	-	-	-	-0.01776	-0.09461	-	-	-	-	-	-	-	-
G. gangeticus	-0.17359	-0.20534	0.02510	-	-	-	-	-	-	-0.01402	-0.09431	-	-	-	-	-	-	-	-

Table S11. Reconstructed values for PC1 and PC2 ontogenetic trajectory elevations at ancestral nodes in the molecular topology based on maximum likelihood estimation for continuous variables and using species specific mean sizes to calculate elevation. Extant species differ in mean size, so It is necessary to calculate species specific elevations at each ancestral node to ensure elevation comparisons are based on the same size value. Node numbers are those in figure S4.

Table S12. Elevations for ancestral PC1 & 2 ontogenetic trajectories - Morphology

Ancestral PC1 Ontogeny Elevations - Morphology

	95% CI max	95% CI min	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m
P. trigonatus	0.01233	-0.02202	0.06634	0.02832	-0.02087	-	-0.02726	-	-	-0.00394	-	-	-	-	-	-	-	-	-
P. palpebrosus	-0.07799	-0.09602	0.00859	-0.03416	-0.08657	-	-0.09635	-	-	-0.08903	-	-	-	-	-	-	-	-	-
Caiman crocodilus	-0.03907	-0.05540	0.04605	0.00637	-0.04396	-	-0.05154	-0.07569	-0.06053	-	-	-	-	-	-	-	-	-	-
Caiman yacare	0.08469	-0.00955	0.10152	0.06636	0.01913	-	0.01481	-0.01225	0.00836	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	-0.02858	-0.07264	0.06875	0.03092	-0.01813	-	-0.02438	-0.04973	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	-0.10249	-0.15261	-0.01452	-0.05915	-0.11285	-0.11752	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	-0.02503	-0.04443	0.06043	0.02193	-0.02759	-0.03662	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	0.03644	0.00254	0.08322	0.04657	-	-	-	-	-	-	0.04909	0.01264	0.01889	0.00889	0.00303	0.00999	0.02503	-	-
C. porosus	0.08346	0.06749	0.14306	0.11130	-	-	-	-	-	-	0.11573	0.08169	0.09080	0.06882	0.06242	0.06828	0.07717	-	-
C. siamensis	-0.05371	-0.07035	0.02169	-0.01998	-	-	-	-	-	-	-0.01944	-0.05836	-0.05504	-0.05273	-0.05803	-0.04994	-	-	-
C. palustris	0.01443	-0.01862	0.11157	0.07724	-	-	-	-	-	-	0.08066	0.04536	0.05297	0.03729	0.03117	-	-	-	-
C. niloticus	0.07780	0.05814	0.13453	0.10208	-	-	-	-	-	-	0.10624	0.07186	0.08056	0.06029	-	-	-	0.06617	-
C. rhombifer	0.02636	-0.01435	0.05857	0.01991	-	-	-	-	-	-	0.02163	-0.01581	-0.01073	-0.01580	-	-	-	-0.00622	-0.01914
C. moreletii	-0.11126	-0.13101	-0.01091	-0.05524	-	-	-	-	-	-	-0.05575	-0.09598	-0.09422	-0.08538	-	-	-	-0.07242	-0.10146
M. cataphractus	0.07152	0.04167	0.09086	0.05484	-	-	-	-	-	-	0.05760	0.02146	0.02808	-	-	-	-	-	-
O. tetraspis	-0.09983	-0.12726	0.01445	-0.02782	-	-	-	-	-	-	-0.02750	-0.06672	-	-	-	-	-	-	-
T. schlegelii	0.15615	0.11607	0.11259	0.07834	-	-	-	-	-	-	0.08179	-	-	-	-	-	-	-	-
G. gangeticus	0.21912	0.15519	0.12528	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Ancestral PC2 Ontogeny Elevations - Morphology

	95% CI max	95% CI min	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m
P. trigonatus	0.03605	0.01962	-0.08226	-0.03289	0.02527	-	0.03378	-	-	0.04442	-	-	-	-	-	-	-	-	-
P. palpebrosus	0.01927	-0.00422	-0.08568	-0.05002	-0.00655	-	-0.00158	-	-	0.00309	-	-	-	-	-	-	-	-	-
Caiman crocodilus	0.03713	0.02617	-0.08346	-0.03891	0.01409	-	0.02136	0.02973	0.03001	-	-	-	-	-	-	-	-	-	-
Caiman yacare	0.08695	0.05115	-0.08018	-0.02245	0.04466	-	0.05532	0.06661	0.06144	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	0.05692	0.03724	-0.08212	-0.03217	0.02660	-	0.03526	0.04482	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	0.03313	0.01996	-0.08705	-0.05688	-0.01929	-0.01036	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	0.03546	0.01767	-0.08261	-0.03464	0.02202	0.03176	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	0.02340	0.00425	-0.08126	-0.02788	-	-	-	-	-	-	-0.02585	0.00974	0.00371	0.01849	0.01801	0.01748	0.01653	-	-
C. porosus	0.04160	0.03118	-0.07771	-0.01013	-	-	-	-	-	-	-0.00654	0.03653	0.02809	0.04075	0.03973	0.03959	0.03746	-	-
C. siamensis	-0.00512	-0.01511	-0.08490	-0.04613	-	-	-	-	-	-	-0.04571	-0.01780	-0.02135	-0.00439	-0.00433	-0.00525	-	-	-
C. palustris	0.03899	0.01170	-0.07958	-0.01947	-	-	-	-	-	-	-0.01670	0.02243	0.01526	0.02904	0.02830	-	-	-	-
C. niloticus	0.04993	0.03608	-0.07822	-0.01266	-	-	-	-	-	-	-0.00929	0.03271	0.02461	0.03758	-	-	-	0.04379	-
C. rhombifer	0.02759	0.01890	-0.08272	-0.03519	-	-	-	-	-	-	-0.03381	-0.00130	-0.00633	0.00932	-	-	-	0.01507	0.01192
C. moreletii	-0.03085	-0.04971	-0.08683	-0.05580	-	-	-	-	-	-	-0.05623	-0.03240	-0.03463	-0.01652	-	-	-	-0.01119	-0.02598
M. cataphractus	-0.01563	-0.02814	-0.08081	-0.02561	-	-	-	-	-	-	-0.02339	0.01316	0.00683	-	-	-	-	-	-
O. tetraspis	0.02630	0.00521	-0.08533	-0.04828	-	-	-	-	-	-	-0.04805	-0.02104	-	-	-	-	-	-	-
T. schlegelii	-0.05697	-0.06902	-0.07952	-0.01917	-	-	-	-	-	-	-0.01637	-	-	-	-	-	-	-	-
G. gangeticus	-0.17359	-0.20534	-0.07877	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table S12. Reconstructed values for PC1 and PC2 ontogenetic trajectory elevations at ancestral nodes in the morphology topology based on maximum likelihood estimation for continuous variables and using species specific mean sizes to calculate elevation. Extant species differ in mean size, so It is necessary to calculate species specific elevations at each ancestral node to ensure elevation comparisons are based on the same size value. Node numbers are those in figure S4.

Table S13. Heterochronic shifts identified by confidence interval test - Molecular

Ancestral PC1 Ontogeny Slope Test - Molecular

	1g	2g	3g	4g	5g	6g	7g	8g	9g	10g	11g	12g	13g	14g	15g	16g	17g
P. trigonatus	NS	NS	-	NS	-	-	NS	-	-	-	-	-	-	-	-	-	-
P. palpebrosus	Acceleration	Acceleration	-	Acceleration	-	-	NS	-	-	-	-	-	-	-	-	-	-
Caiman crocodilus	NS	NS	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-
Caiman yacare	NS	NS	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	NS	NS	-	Deceleration	NS	-	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	Acceleration	NS	Acceleration	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	Deceleration	Deceleration	Deceleration	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	NS	-	-	-	-	-	-	NS	-	NS	-	NS	-	-	-	-	-
C. porosus	Deceleration	-	-	-	-	-	-	Deceleration	-	Deceleration	-	Deceleration	Deceleration	Deceleration	-	-	-
C. siamensis	NS	-	-	-	-	-	-	NS	-	NS	-	NS	NS	Acceleration	NS	-	-
C. palustris	NS	-	-	-	-	-	-	NS	-	NS	-	NS	NS	NS	NS	-	-
C. niloticus	Deceleration	-	-	-	-	-	-	Deceleration	-	Deceleration	-	Deceleration	Deceleration	-	-	Deceleration	-
C. rhombifer	NS	-	-	-	-	-	-	NS	-	NS	-	NS	NS	-	-	NS	NS
C. moreletii	NS	-	-	-	-	-	-	NS	-	NS	-	NS	NS	-	-	NS	NS
M. cataphractus	Acceleration	-	-	-	-	-	-	Acceleration	-	Acceleration	Acceleration	-	-	-	-	-	-
O. tetraspis	NS	-	-	-	-	-	-	NS	-	NS	NS	-	-	-	-	-	-
T. schlegelii	NS	-	-	-	-	-	-	NS	NS	-	-	-	-	-	-	-	-
G. gangeticus	NS	-	-	-	-	-	-	NS	NS	-	-	-	-	-	-	-	-

Ancestral PC1 Ontogeny Elevation Test - Molecular

	1g	2g	3g	4g	5g	6g	7g	8g	9g	10g	11g	12g	13g	14g	15g	16g	17g
P. trigonatus	NS	NS	-	Pre-displacement	-	-	NS	-	-	-	-	-	-	-	-	-	-
P. palpebrosus	Post-displacement	NS	-	Pre-displacement	-	-	NS	-	-	-	-	-	-	-	-	-	-
Caiman crocodilus	Post-displacement	Post-displacement	-	NS	Pre-displacement	Pre-displacement	-	-	-	-	-	-	-	-	-	-	-
Caiman yacare	NS	NS	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	Post-displacement	Post-displacement	-	Post-displacement	NS	-	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	Post-displacement	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	Post-displacement	Post-displacement	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	NS	-	-	-	-	-	-	Post-displacement	-	NS	-	NS	-	-	-	-	-
C. porosus	Post-displacement	-	-	-	-	-	-	Post-displacement	-	Post-displacement	-	NS	NS	NS	-	-	-
C. siamensis	Post-displacement	-	-	-	-	-	-	Post-displacement	-	NS	-	NS	Post-displacement	Post-displacement	NS	-	-
C. palustris	Post-displacement	-	-	-	-	-	-	Post-displacement	-	Post-displacement	-	Post-displacement	Post-displacement	Post-displacement	Post-displacement	-	-
C. niloticus	Post-displacement	-	-	-	-	-	-	Post-displacement	-	NS	-	NS	NS	-	-	NS	-
C. rhombifer	NS	-	-	-	-	-	-	NS	-	Pre-displacement	-	NS	NS	-	-	NS	Pre-displacement
C. moreletii	Post-displacement	-	-	-	-	-	-	Post-displacement	-	Post-displacement	-	Post-displacement	Post-displacement	-	-	Post-displacement	Post-displacement
M. cataphractus	Pre-displacement	-	-	-	-	-	-	NS	-	Pre-displacement	Pre-displacement	-	-	-	-	-	-
O. tetraspis	Post-displacement	-	-	-	-	-	-	Post-displacement	-	Post-displacement	Post-displacement	-	-	-	-	-	-
T. schlegelii	Pre-displacement	-	-	-	-	-	-	Pre-displacement	NS	-	-	-	-	-	-	-	-
G. gangeticus	Pre-displacement	-	-	-	-	-	-	Pre-displacement	Pre-displacement	-	-	-	-	-	-	-	-

Ancestral PC2 Ontogeny Slope Test - Molecular

	1g	2g	3g	4g	5g	6g	7g	8g	9g	10g	11g	12g	13g	14g	15g	16g	17g
P. trigonatus	NS	NS	-	Deceleration	-	-	Deceleration	-	-	-	-	-	-	-	-	-	-
P. palpebrosus	Acceleration	Acceleration	-	Acceleration	-	-	NS	-	-	-	-	-	-	-	-	-	-
Caiman crocodilus	Acceleration	Acceleration	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-
Caiman yacare	NS	NS	-	Deceleration	Deceleration	Deceleration	-	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	Acceleration	Acceleration	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	Acceleration	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	NS	-	-	-	-	-	-	NS	-	NS	-	NS	-	-	-	-	-
C. porosus	Deceleration	-	-	-	-	-	-	NS	-	Deceleration	-	Deceleration	Deceleration	NS	-	-	-
C. siamensis	NS	-	-	-	-	-	-	Acceleration	-	NS	-	NS	NS	NS	NS	-	-
C. palustris	NS	-	-	-	-	-	-	NS	-	NS	-	NS	NS	NS	NS	-	-
C. niloticus	NS	-	-	-	-	-	-	NS	-	NS	-	NS	NS	-	-	NS	-
C. rhombifer	NS	-	-	-	-	-	-	Acceleration	-	NS	-	NS	NS	-	-	NS	NS
C. moreletii	Acceleration	-	-	-	-	-	-	Acceleration	-	Acceleration	-	Acceleration	Acceleration	-	-	Acceleration	Acceleration
M. cataphractus	NS	-	-	-	-	-	-	NS	-	NS	Deceleration	-	-	-	-	-	-
O. tetraspis	Acceleration	-	-	-	-	-	-	Acceleration	-	Acceleration	Acceleration	-	-	-	-	-	-
T. schlegelii	Deceleration	-	-	-	-	-	-	Deceleration	Acceleration	-	-	-	-	-	-	-	-
G. gangeticus	Deceleration	-	-	-	-	-	-	Deceleration	NS	-	-	-	-	-	-	-	-

Ancestral PC2 Ontogeny Elevation Test - Molecular

	1g	2g	3g	4g	5g	6g	7g	8g	9g	10g	11g	12g	13g	14g	15g	16g	17g
P. trigonatus	Pre-displacement	NS	-	Post-displacement	-	-	Post-displacement	-	-	-	-	-	-	-	-	-	-
P. palpebrosus	Pre-displacement	Pre-displacement	-	NS	-	-	NS	-	-	-	-	-	-	-	-	-	-
Caiman crocodilus	Pre-displacement	Pre-displacement	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-
Caiman yacare	Pre-displacement	Pre-displacement	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	Pre-displacement	Pre-displacement	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	Pre-displacement	Pre-displacement	Pre-displacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	Pre-displacement	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	NS	-	-	-	-	-	-	Pre-displacement	-	NS	-	NS	-	-	-	-	-
C. porosus	NS	-	-	-	-	-	-	Pre-displacement	-	NS	-	Post-displacement	Post-displacement	Post-displacement	-	-	-
C. siamensis	Pre-displacement	-	-	-	-	-	-	Pre-displacement	-	Pre-displacement	-	NS	NS	NS	NS	-	-
C. palustris	NS	-	-	-	-	-	-	Pre-displacement	-	NS	-	NS	NS	NS	NS	-	-
C. niloticus	Pre-displacement	-	-	-	-	-	-	Pre-displacement	-	Pre-displacement	-	NS	NS	-	-	NS	-
C. rhombifer	Pre-displacement	-	-	-	-	-	-	Pre-displacement	-	Pre-displacement	-	Pre-displacement	Pre-displacement	-	-	Pre-displacement	Pre-displacement
C. moreletii	NS	-	-	-	-	-	-	Pre-displacement	-	NS	-	Post-displacement	Post-displacement	-	-	Post-displacement	Post-displacement
M. cataphractus	Post-displacement	-	-	-	-	-	-	NS	-	Post-displacement	Post-displacement	-	-	-	-	-	-
O. tetraspis	Pre-displacement	-	-	-	-	-	-	Pre-displacement	-	Pre-displacement	Pre-displacement	-	-	-	-	-	-
T. schlegelii	Post-displacement	-	-	-	-	-	-	Post-displacement	Pre-displacement	-	-	-	-	-	-	-	-
G. gangeticus	Post-displacement	-	-	-	-	-	-	Post-displacement	Post-displacement	-	-	-	-	-	-	-	-

Table S13. Reconstructed heterochronic shifts based on comparison of ancestral ontogenetic trajectory coefficients (slope and elevation) to extant species values. Resampling was used to estimate 95% confidence intervals. "NS" means non-significant difference between tip species and ancestral node. Acceleration and deceleration show significant differences in slope while Pre- and Post-displacement show significant differences in elevation. When slopes were significantly different, elevation differences were not considered meaningful. Values used for comparison can be found in Tables S9, S10, and S11. Results are those based on the molecular topology with node numbers matching those in figure S4.

Table S14. Heterochronic shifts identified by confidence interval test - Morphology

Ancestral PC1 Ontogeny Slope Test - Morphology

	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m
P. trigonatus	NS	NS	NS	-	NS	-	-	NS	-	-	-	-	-	-	-	-	-
P. palpebrosus	Acceleration	Acceleration	Acceleration	-	Acceleration	-	-	NS	-	-	-	-	-	-	-	-	-
Caiman crocodilus	Acceleration	NS	NS	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-
Caiman yacare	NS	NS	NS	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	NS	NS	NS	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	Acceleration	Acceleration	Acceleration	Acceleration	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	NS	NS	Deceleration	NS	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	Acceleration	NS	-	-	-	-	-	-	NS	NS	NS	Acceleration	Acceleration	Acceleration	Acceleration	-	-
C. porosus	Deceleration	Deceleration	-	-	-	-	-	-	Deceleration	Deceleration	Deceleration	Deceleration	Deceleration	Deceleration	NS	-	-
C. siamensis	Acceleration	NS	-	-	-	-	-	-	NS	NS	NS	Acceleration	Acceleration	Acceleration	-	-	-
C. palustris	NS	NS	-	-	-	-	-	-	NS	NS	NS	NS	NS	-	-	-	-
C. niloticus	NS	Deceleration	-	-	-	-	-	-	Deceleration	Deceleration	Deceleration	NS	-	-	-	NS	-
C. rhombifer	NS	NS	-	-	-	-	-	-	NS	NS	NS	NS	-	-	-	Acceleration	NS
C. moreletii	Acceleration	Acceleration	-	-	-	-	-	-	NS	NS	NS	Acceleration	-	-	-	Acceleration	NS
M. cataphractus	Acceleration	Acceleration	-	-	-	-	-	-	Acceleration	Acceleration	Acceleration	-	-	-	-	-	-
O. tetraspis	NS	NS	-	-	-	-	-	-	NS	NS	-	-	-	-	-	-	-
T. schlegelii	NS	NS	-	-	-	-	-	-	NS	-	-	-	-	-	-	-	-
G. gangeticus	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Ancestral PC1 Ontogeny Elevation Test - Morphology

	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m
P. trigonatus	Post-displacement	Post-displacement	NS	-	Pre-displacement	-	-	NS	-	-	-	-	-	-	-	-	-
P. palpebrosus	Post-displacement	Post-displacement	NS	-	Pre-displacement	-	-	NS	-	-	-	-	-	-	-	-	-
Caiman crocodilus	Post-displacement	Post-displacement	NS	-	NS	Pre-displacement	Pre-displacement	-	-	-	-	-	-	-	-	-	-
Caiman yacare	Post-displacement	NS	NS	-	NS	Pre-displacement	NS	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	Post-displacement	Post-displacement	Post-displacement	-	Post-displacement	NS	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	Post-displacement	Post-displacement	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	Post-displacement	Post-displacement	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	Post-displacement	Post-displacement	-	-	-	-	-	-	Post-displacement	NS	NS	NS	NS	NS	NS	-	-
C. porosus	Post-displacement	Post-displacement	-	-	-	-	-	-	Post-displacement	NS	Post-displacement	NS	Pre-displacement	NS	NS	-	-
C. siamensis	Post-displacement	Post-displacement	-	-	-	-	-	-	Post-displacement	NS	NS	Post-displacement	NS	Post-displacement	-	-	-
C. palustris	Post-displacement	Post-displacement	-	-	-	-	-	-	Post-displacement	Post-displacement	Post-displacement	Post-displacement	Post-displacement	-	-	-	-
C. niloticus	Post-displacement	Post-displacement	-	-	-	-	-	-	Post-displacement	NS	Post-displacement	NS	-	-	-	NS	-
C. rhombifer	Post-displacement	NS	-	-	-	-	-	-	NS	Pre-displacement	NS	Pre-displacement	-	-	-	NS	Pre-displacement
C. moreletii	Post-displacement	Post-displacement	-	-	-	-	-	-	Post-displacement	Post-displacement	Post-displacement	Post-displacement	-	-	-	Post-displacement	Post-displacement
M. cataphractus	Post-displacement	NS	-	-	-	-	-	-	NS	Pre-displacement	Pre-displacement	-	-	-	-	-	-
O. tetraspis	Post-displacement	Post-displacement	-	-	-	-	-	-	Post-displacement	Post-displacement	-	-	-	-	-	-	-
T. schlegelii	Pre-displacement	Pre-displacement	-	-	-	-	-	-	Pre-displacement	-	-	-	-	-	-	-	-
G. gangeticus	Pre-displacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Ancestral PC2 Ontogeny Slope Test - Morphology

	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m
P. trigonatus	Acceleration	NS	Deceleration	-	Deceleration	-	-	Deceleration	-	-	-	-	-	-	-	-	-
P. palpebrosus	Acceleration	Acceleration	Acceleration	-	Acceleration	-	-	NS	-	-	-	-	-	-	-	-	-
Caiman crocodilus	Acceleration	Acceleration	NS	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-
Caiman yacare	NS	NS	Deceleration	-	Deceleration	Deceleration	Deceleration	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	Acceleration	Acceleration	NS	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	Acceleration	Acceleration	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	Acceleration	Acceleration	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	Acceleration	Acceleration	-	-	-	-	-	-	Acceleration	NS	NS	NS	NS	NS	NS	-	-
C. porosus	Acceleration	NS	-	-	-	-	-	-	NS	Deceleration	NS	NS	NS	NS	NS	-	-
C. siamensis	Acceleration	Acceleration	-	-	-	-	-	-	Acceleration	NS	NS	Acceleration	Acceleration	Acceleration	-	-	-
C. palustris	Acceleration	NS	-	-	-	-	-	-	NS	NS	NS	NS	NS	-	-	-	-
C. niloticus	Acceleration	NS	-	-	-	-	-	-	NS	NS	NS	NS	-	-	-	NS	-
C. rhombifer	Acceleration	Acceleration	-	-	-	-	-	-	Acceleration	NS	NS	Acceleration	-	-	-	Acceleration	NS
C. moreletii	Acceleration	Acceleration	-	-	-	-	-	-	Acceleration	Acceleration	Acceleration	Acceleration	-	-	-	Acceleration	Acceleration
M. cataphractus	Acceleration	NS	-	-	-	-	-	-	NS	NS	NS	-	-	-	-	-	-
O. tetraspis	Acceleration	Acceleration	-	-	-	-	-	-	Acceleration	Acceleration	-	-	-	-	-	-	-
T. schlegelii	Acceleration	Deceleration	-	-	-	-	-	-	Deceleration	-	-	-	-	-	-	-	-
G. gangeticus	Deceleration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Ancestral PC2 Ontogeny Elevation Test - Morphology

	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m
P. trigonatus	Pre-displacement	Pre-displacement	NS	-	NS	-	-	Post-displacement	-	-	-	-	-	-	-	-	-
P. palpebrosus	Pre-displacement	Pre-displacement	Pre-displacement	-	NS	-	-	NS	-	-	-	-	-	-	-	-	-
Caiman crocodilus	Pre-displacement	Pre-displacement	Pre-displacement	-	Pre-displacement	NS	NS	-	-	-	-	-	-	-	-	-	-
Caiman yacare	Pre-displacement	Pre-displacement	Pre-displacement	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-
Caiman latirostris	Pre-displacement	Pre-displacement	Pre-displacement	-	Pre-displacement	NS	-	-	-	-	-	-	-	-	-	-	-
A. sinensis	Pre-displacement	Pre-displacement	Pre-displacement	Pre-displacement	-	-	-	-	-	-	-	-	-	-	-	-	-
A. mississippiensis	Pre-displacement	Pre-displacement	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-
C. novaeguineae	Pre-displacement	Pre-displacement	-	-	-	-	-	-	Pre-displacement	NS	Pre-displacement	NS	NS	NS	NS	-	-
C. porosus	Pre-displacement	Pre-displacement	-	-	-	-	-	-	Pre-displacement	NS	Pre-displacement	NS	NS	NS	NS	-	-
C. siamensis	Pre-displacement	Pre-displacement	-	-	-	-	-	-	Pre-displacement	Pre-displacement	Pre-displacement	Post-displacement	Post-displacement	NS	-	-	-
C. palustris	Pre-displacement	Pre-displacement	-	-	-	-	-	-	Pre-displacement	NS	NS	NS	NS	-	-	-	-
C. niloticus	Pre-displacement	Pre-displacement	-	-	-	-	-	-	Pre-displacement	Pre-displacement	Pre-displacement	NS	-	-	-	NS	-
C. rhombifer	Pre-displacement	Pre-displacement	-	-	-	-	-	-	Pre-displacement	Pre-displacement	Pre-displacement	Pre-displacement	-	-	-	Pre-displacement	Pre-displacement
C. moreletii	Pre-displacement	Pre-displacement	-	-	-	-	-	-	Pre-displacement	NS	NS	Post-displacement	-	-	-	Post-displacement	Post-displacement
M. cataphractus	Pre-displacement	NS	-	-	-	-	-	-	NS	Post-displacement	Post-displacement	-	-	-	-	-	-
O. tetraspis	Pre-displacement	Pre-displacement	-	-	-	-	-	-	Pre-displacement	Pre-displacement	-	-	-	-	-	-	-
T. schlegelii	Pre-displacement	Post-displacement	-	-	-	-	-	-	Post-displacement	-	-	-	-	-	-	-	-
G. gangeticus	Post-displacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table S14. Reconstructed heterochronic shifts based on comparison of ancestral ontogenetic trajectory coefficients (slope and elevation) to extant species values. Resampling was used to estimate 95% confidence intervals. "NS" means non-significant difference between tip species and ancestral node. Acceleration and deceleration show significant differences in slope while Pre- and Post-displacement show significant differences in elevation. When slopes were significantly different, elevation differences were not considered meaningful. Values used for comparison can be found in Tables S9, S10, and S11. Results are those based on the morphology topology with node numbers matching those in figure S4.