

Effect of temperature fluctuation during incubation on sex determination in *Caiman latirostris*

Matias N. Bella^{1,2}, Melina S. Simoncini^{1,2,3}, Alejandro Larriera¹, Carlos I. Piña^{*1,2,3} and Pamela M.L. Leiva^{1,2,3}

¹Proyecto Yacaré - Laboratorio de Zoología Aplicada: Anexo Vertebrados (FHUC-UNL /MASPyMA) - Aristóbulo del Valle 8700, CP 3000 Santa Fe, Santa Fe, Argentina (matiasnicolas.bio@gmail.com).

²CICyTTP CONICET - Prov. Entre Ríos- UADER. FCyT, - España 149, CP 3105 Diamante, Entre Ríos, Argentina (melinasimoncini22@yahoo.com.ar; cidcarlos@infoaire.com.ar; pameleiva4@gmail.com).

³Facultad de Ciencia y Tecnología, Universidad Autónoma de Entre Ríos, Tratado del Pilar 314 CP 3105, Diamante, Argentina.

Abstract: *Caiman latirostris* presents temperature sex determination (TSD). Most of the studies on TSD have been done under constant incubation temperature, but such situation does not occur in nature. In this work we evaluate the sex ratio of nests incubated under fluctuating thermal daily cycles. We also evaluated if cycles affect hatching success, incubation period, and hatchling size. We set up four treatments, (a) 15 hours at 31°C and 9 hours at 33°C; (b) 9 hours at 31°C and 15 hours at 33°C, and 24 hours constant (c) 31°C and (d) 33°C. Sex ratio in treatment (a) was 77% females, (b) 23% females, and as expected (c) 100% females and (d) 100% males. Hatching success and morphological parameters were not affected by cycling incubation temperature; on the other hand incubation period was shorter as incubation time at 33°C was longer. Analysis of females indicated that as incubation time at 33°C increased, females were smaller; no relationship was found for males, suggesting a possible stress effect only for females. Our results indicate that staying up to 40% of the day at male inducing temperature compared to constant incubation at 31°C reduced female production from 100% to 77%, but staying about 60% of the time at male inducing temperatures reduces female production to 23%.

Keywords: Broad-snouted caiman, Incubation, Sex ratio.

Type of presentation: Oral

Thematic area: Research and knowledge (P2: Natural History)