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## Genetics diversity and population structure of crocodilians black caiman (*Melanosuchus niger*) and spectacled caiman (*Caiman crocodilus*) in Amazon

*William Rangel Vasconcelos*

### Abstract

The Amazonian crocodilians are included in three genera, *Caiman*, *Melanosuchus* and *Paleosuchus*. Within these genera, two species deserve special attention because they were overexploited in past decades; these are the black caiman (*Melanosuchus niger*) and spectacled caiman (*Caiman crocodilus*), the two more abundant crocodilians in the Brazilian Amazon. The objective of this research was to quantify the degree of genetic variability and population structure of the black caiman and the spectacled caiman using a matrilineal marker (mitochondrial gene cytochrome *b*), which to contribute information that can be used for management and for conservation of these species. Approximately 1080 bp were sequenced for a total of 125 individuals of *C. crocodilus* and 132 of *M. niger* representing 9 and 11 localities of each species, respectively. Sampling localities were distributed throughout the Brazilian Amazon, as well as Peru, Ecuador and French Guyana. Results of population genetic analyses demonstrate that some populations of both species are in a process of a demographic expansion shown by a relatively greater number of singleton haplotypes. Both species have high gene diversity but low nucleotide diversity. The Nested Clade Phylogeographical Analysis indicated range expansion, long-distance colonization and past fragmentation as possible historic-demographic event *C. crocodilus* populations. NCPA results for *M. niger* showed no significant historical events. However, in *M. niger* a significant correlation between genetic divergence and geographic distance also was identified by the Mantel test, indicating isolation by distance. The isolated populations of the Atlantic drainages potentially represent evolutionary units differentiated from the Amazon basin populations.

**Key-words:** genetic variability, crocodilians, *Melanosuchus niger*, *Caiman crocodilus*, mtDNA, cyt. *b*, population fragmentation

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Vasconcelos, William Rangel

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