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Herpetofauna diversity evaluated through an integrative approach

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Eastern Panama (EP) is an important biodiversity hot-spot due to its great variety of habitats, high endemism and fast habitat loss. Recently, Panamanian scientists and national authorities have emphasized the urgency of surveys to determine conservation strategies for the herpetofauna in this region. From 2011 to the present, I have repeatedly visited the main mountain ranges in EP, collecting geographical data, specimens and tissue samples for mtDNA barcoding, recording frog calls, and ecological information to assess the status of the herpetofauna in the area. Additionally, we have monitored the population of the critically endangered species Atelopus glyphus in the Pirre area of the Darién National Park. Through an integrative analysis, I could identify 118 amphibians and 156 reptile species present in EP. Additionally, 29 species were not possible to assign to any described species, thus they were catalogued as candidate species, unconfirmed, or cryptic lineages. After this analysis, I have described nine species new to science, revised the taxonomic status of several genera of amphibians (Diasporus, Ecnomiohyla, and Bolitoglossa) and reptiles (Lepidoblapharis and Dactyloa), and synonymized one species in the Pristimantis caryophyllaceus complex. At one locality within the Serranía de Pirre, a population of A. glyphus has decreased dramatically since 2013. An analysis in 2015 confirmed the infection with the Batrachochytrium dendrobatidis (Bd) fungus in dead specimens. Not all populations in the region are affected at the same level, with those at lower elevation apparently less susceptible to changes in their population structure than those from higher elevations. Unfortunately, A. glyphus and many other species in EP are threatened and disappearing, and for most of them, we have little to no knowledge about their ecology, distribution, and/or habits. As EP is an important area for species diversification and diversity, conservational efforts are required urgently.

Biography

Batista Abel is a Biologist by profession and nature lover. With 15 years of field experience in Panama, Costa Rica and Colombia, he has conducted several studies of wildlife rescue, monitoring and research. He completed his Undergraduate studies at the Universidad Autónoma de Chiriqui, Panama, Graduate studies at the University of Bogota, Colombia Andes and PhD at the Senckenberg Institute (in association with the Goethe University), Frankfurt, Germany, all focused on the study of amphibians and reptiles. His main interest is bioacoustics, interaction between anuran communities, biogeography and taxonomy of amphibians and reptiles of Panama.

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