

CROSSING BORDERS: COMPARATIVE PHYLOGEOGRAPHY OF SOUTH AMERICAN LIVEBEARERS

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RESUMO

The La Plata basin, spanning an extensive area of South American highlands from the Amazon basin in the North to the La Plata River estuary in the South, is characterized by its eastern boundaries delineated by the escarpments of Serra do Mar and Serra Geral. These features give rise to numerous hydrographic basins isolated by mountainous terrains, flowing directly into the ocean. Our study aims to investigate the biogeographic role of the watershed divide that separates the coastal basins and the inland La Plata basin, focusing on the livebearers of the genus *Phalloceros* (Poeciliidae) as a model group. Through the integration of morphological and whole-genome sequencing data, we delineated over 20 species within the genus. Notably, four species—*Phalloceros reisi*, *P. spiloura*, *P. titthos*, and an undescribed species—are found on both sides of the divide. For our phylogeographic analysis, we sampled 192 individuals across 46 populations, with 19 originating from headwaters of the La Plata basin and 27 from headwaters of coastal basins, utilizing a variety of markers ranging from mitochondrial data (COI) to ddRADseq. Preliminary results reveal that *Phalloceros* populations from the La Plata are not monophyletic, and the distribution of highland species suggests a minimum of four independent dispersal events across the Serra do Mar biogeographic barrier.

Palavras-chave: ddRADseq, Serra do Mar, Serra Geral, *Phalloceros*.

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