



Atlantic Forest earthworms: biodiversity and conservation priorities

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The Brazilian Atlantic Rainforest biome once covered around 15% of the surface of Brazil (1.3 million km²), ranging in the south from the state of Rio Grande do Sul all the way to the northeastern state of Ceará, mainly along the Atlantic Coast, but also reaching inland up to the border with Paraguay and Argentina. Currently, only 7-13% of the original forest cover remain (value depends on source of estimates), most of it is protected by law in various parks and reserves. The forest is considered a hot-spot of Biodiversity, with thousands of species of plants and animals, many of which are endemic. Many species on the Brazilian Red Data list are from the Atlantic forest (three are earthworm species), highlighting the need for conservation of this precious realm. Of the 306 known species of earthworms in Brazil, 144-155 (number depends on Atlantic Forest boundaries) are present in the Atlantic Forest; however, of these, 35 are exotic and 109-120 native species. Of the native species, more than 40 are new to science, having mostly been discovered in recent sampling (2001 to present). Of the native species, most (>80 spp.) are in the Glossoscolecidae family, while the remaining are in the Ocnerodrilidae (aprox. 20 sp.) or other families (4 spp.). Of the total species 22 native and 9 exotic are shared with the Cerrado vegetation biome, indicating that most (80%) of the known species are probably endemic to the Atlantic Forest. Nevertheless, the number of sample sites in the Atlantic Forest (H²250 sites) still remains grossly insufficient, most being concentrated in the states of São Paulo (H²120 sites) and Paraná (H²50 sites). Three states have no earthworm data (Rio Grande do Norte, Piauí and Alagoas), and the remaining northeastern states are generally poorly known regarding earthworms. Espírito Santo, Rio de Janeiro and Santa Catarina, states that contain a significant cover of Atlantic Forest have also been poorly studied regarding earthworms, despite a large number of active biologists. Various organizations have mapped the priority sites for conservation of the Atlantic Forest. These generally coincide with the priority areas for earthworms sampling and conservation, although sampling efforts must be increased and proper assessment of population and species diversity and distribution are necessary, both within conserved sites and in smaller (local) fragments, to adequately assess the real diversity and conservation status of known and still undescribed species of Atlantic Rainforest earthworms.