

Poster – Session 3

Invasion of *Pontoscolex corethrurus* (Glossoscolecidae, Oligochaeta) in Amazonian landscapes

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Pontoscolex corethrurus (Glossoscolecidae, Oligochaeta) is an invasive endogeic earthworm that has colonized most land transformed by human activities in the humid tropics. When installed, populations can change soil physical properties, biogeochemical processes and microbial communities. The aim of this study was to determine whether *P. corethrurus* establishment is a result of: 1) a competitive exclusion of native species, or 2) the exploitation of a new niche created by disturbance that native species cannot use. We tested these hypotheses by performing a survey of earthworm communities in 270 sample points that covered the diversity of land use systems encountered in two contrasted regions of the Amazonian arc of deforestation, in Brazil and Colombia, respectively. Independence between the processes that determine each group density, indicating an absence of competitive exclusion, was verified by their respective locations on orthogonal (Colombian points) or quasi-orthogonal (Brazilian points) axes of a Principal Component Analysis of their abundance across sampling points and land uses. *Pontoscolex corethrurus* densities co-varied with soil N content and pH (all points). Our results thus suggest the latter hypothesis, i.e., that *P. corethrurus*, unlike native species, is able to feed and develop in environments where litter resources are severely decreased and soils have been enriched in C and nutrients by deforestation and burning.