





PROGRAM

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Symposium

Diversity of tree and liana species in Lomami National Park in the Democratic Republic of Congo (214)

 Thu, July 18

 Room 1
Conference Venue

 symposium

Part of:

S-27 Liana Ecology Unveiled: Exploring Multifaceted Roles in Tropical Forest Ecosystems

Abstract

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Lianas are important component of the tropical forest ecosystem, strongly contributing to the biodiversity and impacting the forest dynamics because of their influence on the growth and mortality of trees and shrubs. High abundances of liana can reduce total forest biomass and, consequently, the carbon sequestration capacity of mature forests. While lianas have received a renewed interest in the Neotropics, with an increased abundance reported in several sites, there is only little information on liana diversity and abundance in the Congo basin.

In the frame of the TL2 project, we installed a vast plot network in the Lomami National Park (LNP) in the Democratic Republic of Congo in an area previously under sampled. The network is composed of 89 plots of 0.25 ha each spread over four different combinations of water regime (terra firme vs. seasonally flooded forests) and soil type (clay vs. sandy soils), that were replicated in the southern and northern parts of the park. Trees and lianas were inventoried in the plots and herbarium samples were collected for each species in each plot. Diversity indices (species richness, Shannon and Simpson indices, and Fisher's alpha) were computed at the plot level for the trees and lianas, separately, and the influence of the water regime, soil type, and region, on tree/liana diversity was examined with a set of ANOVAs.

A total of 9,156 trees ≥ 10 cm dbh belonging to 49 families, 195 genera, and 446 tree species were recorded in a total inventoried surface of 22.25 ha (89 plots of 0.25 ha) in the LNP. A total of 4,948 lianas belonging to 327 species, 84 genera, and 30 families were recorded in the same plots. The diversity of trees was strongly determined by the water regime, with significantly poorer and less

diverse plots in seasonally flooded forest rather than in terra firme forest. The diversity of liana was weakly influenced by the region (Shannon and Simpson) and the water regime (Simpson) rather than by the soil type, with an average higher diversity for seasonally flooded forests, sandy soils, and in the south of the park.

These results confirm (i) the remarkable floristic diversity found in the LNP that was previously observed for other taxonomic groups such as mammals, with iconic species such as the Okapi, or the forest elephant, but also new species being discovered, and (ii) the important contribution of liana to the biodiversity of tropical forests.

Keywords:

Diversity, tree, liana, environmental condition and Congo basin

Presenter(s)**Modestine Amisi Kompanyi**

Presenter

Liege University

Congo, The Democratic Republic of the

**Jean-Remy M. Makana**

Co-Author

Université de Kisangani

Congo, The Democratic Republic of the

**Wannes Hubau**

Co-Author

Ghent University

**Terese Hart**

Co-Author

Congolese Institute for Nature Conservation, Kinshasa,
Democratic Republic of the Congo

**John Hart**

Co-Author

Congolese Institute for Nature Conservation, Kinshasa,
Democratic Republic of the Congo



Adeline Fayolle

Co-Author

Université de Liège - Gembloux Agro-Bio Tech

Belgium