

How pristine is the Congo Basin rainforest? Some answers from *Erythrophleum suaveolens* (Caesalpiniaceae) and *Pericopsis elata* (Fabaceae) natural stands in southeastern Cameroon

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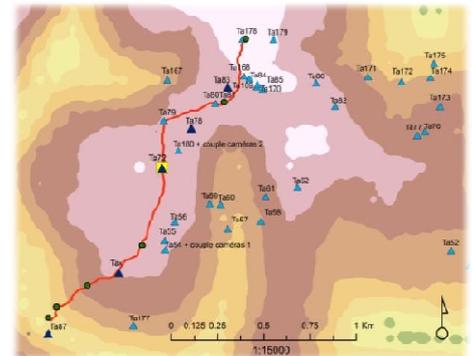
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Context and objective

In Central Africa, data collected during large scale management inventories show that several timber species suffer from a lack of regeneration. Among them, both tali (*Erythrophleum suaveolens*) and assamela (afrommosia; *Pericopsis elata*) are long-lived light demanding tall trees of high commercial value. Nomadic human populations, mainly through slash and burn cultivation, could have played an important role in their settlement. Our study aims at verifying this assumption in southeastern Cameroon.

Materials and methods

Anthracological pits (squares of 50 x 50 cm; 100 cm depth) and botanical inventories were made on transects opened alongside the toposequence in patches where those taxa occur as well as the surrounding vegetation (6 sites). The soil was excavated from each pit for charcoal investigation purposes.



Toposequence in a patch rich in tali

Results

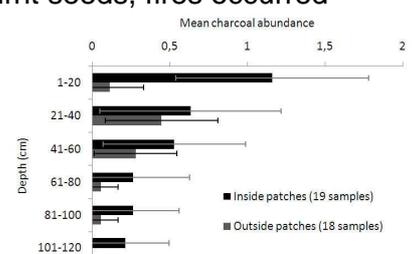
Several charcoal elements and some pottery fragments and burnt seeds were found in excavated soils in all studied sites (2 and 4 sites rich in tali and assamela, respectively).



Pieces of charcoal collected within a zone characterized by a high density of tali

Charcoals and pieces of pottery/seeds were collected within the first 100 and 50 cm of soil, respectively. According to radiocarbon dating conducted on charcoals and burnt seeds, fires occurred between 2,150 to 195 years BP. The probability to discover charcoals was higher inside *P. elata*'s patches than outside ($F_{1,35} = 7.74$; $P = 0.010$). Soil depth had a significant impact on charcoal abundance ($F_{5,36} = 2.79$; $P = 0.037$), this last parameter decreasing with depth.

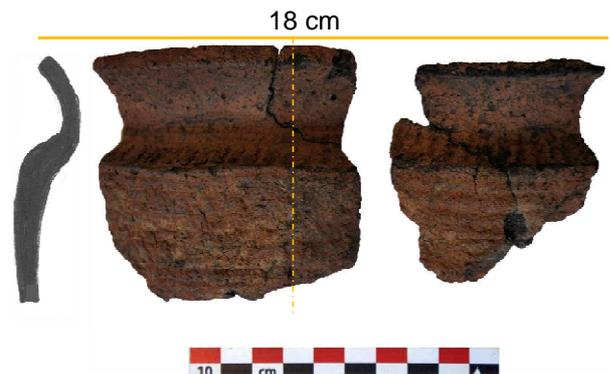
Charcoals abundance (Brcnic, 2002) by soil depth and belonging or not to assamela's patches



Brcnic TM (2002). Ecology and patch dynamics of *Megaphrynium macrostachyum* (Benth.) Milne-Redh. (Marantaceae) in the south-west Central African Republic. PhD Dissertation. Oxford: Oxford University

Conclusion

Charcoal/seeds dating results were consistent with the analysis of archaeological materials decoration techniques. Our findings revealed intense past anthropological activities in this part of southeastern Cameroon, seriously questioning the assumption of a pristine Congo Basin forest. Past drier periods could have favored human settlements in the forest, cultivation inducing large openings. Then light demanding trees, presently threatened by smaller canopy disturbances (logging), could have taken advantage of those openings.



Elements of pottery collected in an anthracological pit opened in a tali-rich natural forest stand, Southeastern Cameroon