

**Impact d'une crise environnementale majeure sur les espèces, les populations
et les communautés : la fragmentation de la forêt africaine à la fin de
l'Holocène**

*The impact of a major environmental crisis on species, populations and
communities: the fragmentation of African forests at the end of the Holocene*



Résumés
Abstracts

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What can Palms tell us about vegetation history in Central Africa? The case of *Phoenix reclinata* Jacq. within the African palms

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The Palms (Arecaceae/Palmae) are a characteristic tropical rain forest plant family with a rather important presence in African savannas. Constant diversification has occurred within the family for 100 million years, and started at northern latitudes in tropical rain forest-like environments. Although palms are less diverse in Africa when compared to tropical America or Asia, their ecology and distribution can bring new insights in African rain forest history. Palms have adapted to several types of environments. Some genera are restricted to tropical rain forests (e.g. rattans), but rarely to understory environments (*Podococcus* and *Sclerosperma*), and others to the lowland swampy or periodically inundated soils (e.g. the largest genus of African palms *Raphia*). A number of genera occur in savannas and forest-savanna mosaics. The economically important species *Elaeis guineensis* is a light demanding species growing in forests openings and at the forest-savanna ecotone.

Within the Guineo-Congolian floristic region, sub-centers of endemism and impoverished “intervals” between them have been identified. The Sangha River interval (SRI), separating Lower Guinea and Congolian forests, lack numerous species which are present on both sides resulting in disjunct distributions. In contrast, *Phoenix reclinata*, which is normally absent from rain forests and mostly present in savannas on wet soils, occur within the SRI, in swamp clearings and near rivers. It is absent from equivalent environments in the rest of the rain forest block, apart from the forest-savanna mosaic along the Atlantic Ocean. During drier climatic periods, the SRI might have been less favorable for evergreen rain forests, which would have allowed wooded savannas or other drier forests to expand, acting as a corridor between the Sudanian and Zambezian Regions. This is confirmed by an important development of *Elaeis guineensis* in the SRI which occurred during the large fragmentation event of ca. 2500 – 2000 BP. The actual presence of a species such as *P. reclinata*, in relict sites, tends to corroborate the hypothesis of SRI opening. This palm is still widely used in Eastern Africa and the role of human mediated dispersal should also be considered in its present distribution.

The presence of savanna species in the forest zone, the scarcity of palms in African rain forests, the abundance of light demanding species and the obvious adaptation of numerous palm species to swamp soils could possibly be linked to the greater impacts of past drier periods on African rain forests, compared to their equivalents in the Neotropics and Asia. If it is still not clear whether the SRI and the Atlantic corridor reflect present ecological conditions or have an historical explanation, the presence of *P. reclinata* in the SRI reinforces the hypothesis of a past opening of the rainforest block in this area. The presence of species such as *P. reclinata* in both the Sangha and the Atlantic migration routes of the Bantu people questions also the link between past forest openings, Human migrations and the presence of useful species transported by people. Linguistic studies might provide useful insights in confirming these findings. Phylogenetic and phylogeographic studies should also be undertaken to test the taxonomic status of the various “forms” of *P. reclinata* and their evolutionary history.