

The 2500 B.P. Savanna Expansion of west central Africa: Humans or Climate? Understanding the relationship between the iron-age Bantu migration, climate change, and abrupt vegetation disturbance in the African tropical forest zone during the late Holocene from Lake Ossa, Cameroon

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Lake Ossa, a lake east of the Guinea coast in western Cameroon, records a sudden vegetation change that occurred in the tropical forests of west and central Africa around 2500-2000 B.P. Pollen records show a large decrease in canopy-building taxa, with a concurrent increase in population of semi-arid savanna species. This rainforest crisis was roughly synchronous with the migration of the iron-age Bantu people, so it is difficult to determine if this vegetation disruption was due to natural climate variances, anthropogenic reasons, or a mixture of both. A climate proxy independent from possible human influences is needed to resolve this issue and assess the role of climate in this question.

This research aims to approach this problem by employing a source-specific biomarker isotope analysis. One tool that has been developed over the last few years is the stable hydrogen isotope analysis of plant leaf waxes preserved in lake sediments, which can provide a record of past changes in precipitation. The geochemical analysis of hydrogen isotope compositions from leaf wax *n*-alkanes extracted from Lake Ossa sediments will be a novel geochemical method helpful in extending our knowledge on the origins of the west and central vegetation disruptions of 2500 B.P.

Keywords: Paleoclimate, African Rainforest Crisis, Leaf Wax Alkanes, Hydrogen Stable Isotopes, Lake Ossa, Cameroon.