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A Forest Refuge pinpointed to the Ground: Mts. Birougou, Gabon

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The distribution of forest and savannahs in the Congo basin altered with changing climate throughout the Holocene. In order to understand the dynamics of the forest/savannah replacement process, reference patches of stable savannah or stable rainforest are required. Vegetation dynamics of an area of rainforest located at the Birougou Mountains in Gabon were analysed using the signature of stable Carbon isotope discrimination of photosynthesis, which differs between savannahs and rainforests. These differences in Carbon isotope discrimination enabled the investigation of the vegetative history of the Mts. Birougou region throughout the Holocene. The results of the research indicate that the Mts. Birougou region was continuously covered by rainforest since the Holocene climate optimum (∼6-7,000 yrs. BP) and hence did not suffer from the catastrophic decline of rainforest vegetation in the Congo basin between 3,000 yrs. B.P. and 2,000 yrs. B.P. The Mts. Birougou region of the Congolian rainforest can therefore be regarded as a reference ecosystem according to rainforest Carbon storage and species diversity.