

LATE QUATERNARY HISTORY OF THE AMAZON FOREST/SAVANNA BOUNDARY, EASTERN BOLIVIA.

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The study area is Noel Kempff Mercado National Park, which occupies a climatic transition zone between the humid rainforests of the central Amazon to the north, and the dry deciduous forests and cerrado savannas to the south. The park has very high biodiversity, containing five distinct ecosystems: humid evergreen upland forest, inundated (igapo) forest, cerrado savannas, inundated savannas, and deciduous forest.

The aim is to understand the origin of this high biodiversity by analyses of a suite of palaeoenvironmental indicators from lake sediments, including pollen, grass cuticle, phytolith, charcoal, and stable carbon isotopes.

The study site is Laguna Bellavista, a large flat-bottomed lake, approximately 210 metres elevation, and 6 kilometres diameter. Sediment stratigraphy is as follows: 0-124cm: organic mud; 124-135cm: quartz sand; 135-260cm: kaolinite clay; 260-295cm: quartz sand/clay; 295-315cm: compact, barren kaolinite clay. The base of the organic unit (124cm) is dated to 9720 +/- 60 C-14 yr BP; the lowermost sand/clay unit is dated to greater than 50 940 C-14 yr BP. Further dates are pending.

The key finding from the pollen data is that humid tropical evergreen forest is a recent arrival in the park, only appearing in the late Holocene. Peaks in pollen percentages of grass (40%) and *Curatella americana* (10%) indicate that savanna cover, and hence aridity, was highest in the early and mid Holocene. Stable carbon isotope and leaf cuticle analyses are underway to determine the relative extent of C3 and C4 vegetation through the Quaternary.