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View Abstract Details

Title: *Marsh Sediments from Cuatrociénegas, Mexico Indicate Succession of a Late-Pleistocene Paleo-poza to a Contemporary Marsh in the Chihuahuan Desert*

Keywords: Biogeography, Cuatrociénegas, Pleistocene, Holocene, Sediment, Peat, Endemism

Type: Poster

Abstract: The desert ponds (pozas) of Cuatrociénegas, Mexico and the unique aquatic life they support make Cuatrociénegas a hotspot of endemism in North America. Evidence of succession of an aquatic poza to a marsh from a 12.3 m sediment core from Poza Cortador is inferred here from the stratigraphy and age estimation of sediments by AMS radiocarbon dating. Poza sediments indicative of an open-water habitat dominate the core below 5.2 m. Evidence for an open water habitat include abundant shells of the endemic poza snails *Durangonella coahuilae*, *Mexipyrgus churinceanus*, and *Nymphophilus minckleyii*, macrofossils of the aquatic waterlily *Nymphaea ampla*, and biogenic carbonates produced by Cuatrociénegas' unique stromatolites. A transition to peat with abundant macrofossils of marsh taxa including *Typha domingensis* and *Cladium jamaicense* at 5.2 m indicates succession to a shallow-water marsh habitat as the poza filled. AMS radiocarbon dates indicate that the entire 12.3 m record spans at least the last 13,500 years based on a date of 11,645 14C yr BP obtained on a piece of wood 12.1 m deep in the core. Mean sedimentation rates for the poza phase (5.2-12.3 m) of the sedimentary record averages 0.64 mm/yr while sedimentation occurred at a rate of 1.95 mm/yr for the marsh/peat phase (0.1-5.2 m) of the core. The high sedimentation rate in the marsh phase of the core is similar to rates reported in peats accumulated in highly productive tropical and sub-tropical environments.

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