

Abstract

The Gran Chaco extends from eastern Bolivia and western Paraguay to northern Argentina. The Chaco is composed of alluvial megafans formed from several east flowing river systems draining the central Andes. Samples were collected from late Pleistocene–Holocene loessic strata in the central and southern portions of the Chaco plains, south of Río Pilcomayo and north of Mar Chiquita. Detrital zircon U-Pb dating was used to better characterize the provenance of these strata. Late Pleistocene–Holocene eolian deposits are found interbedded within alluvial and fluvial deposits in the Gran Chaco. The most abundant age population in the samples is in the range of 455–500 Ma, but samples also include a robust population at 1.0–1.2 Ga, and minor populations of other Proterozoic ages with a few Archean ages present. Minor Permian and Devonian age components are present in some samples and not widely observed in others. Very few Mesozoic age crystals were measured in any of the samples. A limited number of Neogene or younger crystals were observed in the samples, most being Miocene in age. The detrital zircon spectra from the loessic strata are similar to age distributions from the Río Pilcomayo and Río Bermejo. Ostensibly, this suggests that the Late Pleistocene–Holocene eolian deposits formed through deflation of local river floodplains in the Chaco rather than eolian importation from over regions of South America.

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