



## **Paleoclimate of lowland Central America during the last deglaciation**

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Drill cores from Lake Peten Itza, Guatemala contain a high-resolution record (1 m/ka) of terrestrial climate change in the Central American lowlands for the last ~85 ka. Here we report an oxygen isotope record from ostracod shells, together with magnetic susceptibility (MS) and density data for the last deglacial period (~18 to 10 ka BP). Previous studies suggested that cool, dry conditions prevailed in the region during the last glacial maximum (LGM), ~23 to 18 ka BP. Sedimentologic and palynologic data from Peten Itza cores, however, indicate cool and moist conditions in lowland Central America during the LGM, with vegetation dominated by pine-oak forest. The subsequent deglacial period was marked by drier climate, with the greatest  $\delta^{18}\text{O}$  values between ca. 14.5 and 13.5 ka BP. This drier period in Central America coincided with Meltwater Pulse 1A (14.6-13.5 ka) when a substantial volume of glacial meltwater was introduced to the Gulf of Mexico. In contrast, sea surface temperature (SST) reconstructions (Lea et al. 2003), color reflectance, and elemental (Fe, Ti) data (Peterson et al. 2000) from Cariaco Basin cores, north of Venezuela, indicate warmer, wetter conditions for this time interval. Climate reconstructions from these three sites sug-

gest a strong, but perhaps geographically restricted influence of meltwater during the last deglaciation. The Pleistocene/Holocene boundary in Lake Peten Itza is marked by a decrease in  $\delta^{18}\text{O}$  values at 10.35 ka BP (Hillesheim et al. 2005), marking a climate transition from generally arid Late Glacial to moist early Holocene conditions.