

Precision Dating and Fixing of the Equilibrium Altitude Depression at the Last Glacial Maximum Along the Andes/Amazon Interface

**Anton Seimon and Meredith Kelly
IRI & LDEO, Columbia University**

With: Stephen Barker (LDEO)
Thomas Lowell (Dept. of Geology, University of Cincinnati)
Stephan Halloy (Institute of Ecology, San Andres University, La Paz, Bolivia)

Project overview

We propose a small field expedition in southeastern Peru to gather data we believe offer the potential to establish both the timing and magnitude of cooling of the Last Glacial Maximum (LGM) over the southwestern Amazon and adjacent Andes. We have photographic evidence for the existence of two small, but well-formed, looped moraines atop Michi Michani Cunca (MMC; 13.6°S), a 10-km wide low-relief plateau along the eastern margin of the Andean cordillera in southeastern Peru (Figure 1). This plateau drops precipitously from its margins directly to the lowland rainforest, where annual mean rainfall is 6-7 m. Summits atop the central dome of the plateau all lie below 4,200 m, so the presence of relatively unweathered moraines within an exceptionally pluvial environment identifies that the associated glaciation must have been of relatively recent origin. Furthermore, this activity must have been restricted to a particularly cold epoch, because modern-day glacial equilibrium line altitudes (ELAs) in the region are more than 1000 m higher than any point on MMC.