

### **Iquitos, Puerto Maldonado, Peru, October/November 2001**

Tim Baker made a return trip to Peru to continue collecting data on height/diameter allometry. Working with Roosevelt Garcia, the cluster of plots near Iquitos were revisited, and Antonio Peña Cruz and Paul Hufton assisted with measurements in the forests of south-east Peru, on the Tambopata and Madre de Dios rivers. It was fascinating to compare the less species-rich, and shorter, more seasonal forests of southern Peru with the plots further north. The trip also included a presentation of the work of RAINFOR at the Herbario Vargas, Universidad Nacional de San Antonio Abad del Cusco, in Cusco.

### **Noel Kempff National Park, Bolivia, May/June 2001**

A small group visited La Chonta Forest Reserve where the BOLFOR project has established a longterm experiment to investigate the impact of silvicultural treatments on the regeneration of timber species and on biodiversity. Within this experiment, BOLFOR researchers and collaborators are establishing a large area of control plots (so far, 2 x 24ha, trees>40cm dbh, with 8 ha inventoried at the level of trees>10cm dbh). The team applied the RAINFOR protocols for sampling soils and estimating diameter/height allometry, with the aim of eventually comparing different Amazonian forests to understand the climatic and soil factors controlling forest structure.

The team then moved on to Noel Kempff National Park, a very long drive in four-wheel drive to a remote and beautiful area. Bolivian botanists Luzmilla Arroyo, Alba Arbelaez and Marisol Garvizo and students from the Museo de Historia Natural in Santa Cruz, worked with researchers from Leeds (Oliver Phillips), Edinburgh (Yadvinder Malhi, Sandra Patino), the Max Planck Institut (Almuth Arneith, Jens Schmerler), and Brazilian soil scientists from Brasilia (Beto Quesada) and Manaus (Romilda Quintino de Paiva). This area is at the climatic edge of forest and savanna, and nine plots were recensused in different kinds of forest types, the team successfully overcoming considerable logistical 'challenges' - including aggressive bees and a steep climb up to the Huanchaca tabletop sandstone mountain.

The contrast with North Peru was marked - here in Bolivia there are many fewer species and smaller trees, presumably due to the climatic differences. But the similarities are interesting too - both areas feature a fantastic array of different vegetation types, all determined by local differences in soil depth and nutrients.



### **Iquitos, Peru, January/April 2001**

As the first phase of fieldwork within RAINFOR, five previously established one hectare plots were recensused and five new plots established in three forest reserves near Iquitos, NE Peru. A team of Peruvian botanists, led by Rodolfo Vasquez (Jardin Botanico de Missouri) and including José Campos, Abel Monteguado, Antonio Peña Cruz and Roosevelt Garcia, joined with researchers from the Universities of Leeds; (Oliver Phillips and Tim Baker) and Edinburgh, U.K. (Yadvinder Malhi), and the Max Planck Institut für Biogeochemie, Jena, Germany (Claudia Czimczik, Lina Mercado, Jens Schmerler), to undertake the inventory work and collect soil and foliar samples for nutrient analysis.

Initially work focussed on the remeasurement of five, one hectare plots that had originally been established by teams led by Al Gentry and Rodolfo Vasquez, between 1981 and 1992. The first of the sites, Allpahuayo Forest Reserve, contains areas of forest that have developed over deep, white sand soils (varillal). The topographic range found in the two established plots includes both the clay rich, valley soils and the well drained sandy soils, with distinctive variation in structure and species composition. Plots at Yanamano (1) and Sucusari (2) have more uniform, clay rich soils but extremely high diversity, approaching 300 species >10 cm dbh per hectare. New plots were established to increase the range of edaphic conditions represented within the Iquitos cluster of PSPs. One hectare plots were established on well- and poorly-drained upland soils and in seasonally flooded varzea forest at Sucusari, on upland soils at Yanamano, and on white sand soils at Allpahuayo.

Many improvements were made to the previous inventory protocols used at these sites and these are now being incorporated into a field manual. In addition, measurements were made of tree height, and plot topography, and for the new plots, extensive botanical collections were made. Protocols for soil and foliar nutrient sampling and leaf area index measurement were also developed.

