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Introduction

Special issue: Late Quaternary tropical ecosystem dynamics

This special issue results from the session "Late Quaternary Ecosystem Tropical Dynamics: A Sensitive Tool for Unravelling Climate, Ecological and Human Impacts," convened in Granada, Spain, at the XIVth International Palynology Congress (IPC) in July 2004. The session featured 18 oral presentations and 20 posters describing studies in Latin America and Florida, Africa, India, and Australasia. The purpose of the session was to showcase tropical palaeoecological records as highly sensitive archives that document how complex terrestrial ecosystems change in space and time. There was a special emphasis on the impact of climate, ecological, and human factors, and that emphasis is reflected in the selection of articles in this special issue. Tropical ecosystems both record and respond to changes in their environment in terms of floristic composition, biodiversity, and vegetation structure, especially for the climate changes that have dominated the late Quaternary Period.

Some of the contributions to this special issue focus on methodological developments, such as the extent to which the proxy pollen records are representative of the surrounding environment. The majority present environmental reconstructions from records that span complete glacial–interglacial cycles to the Late Holocene, which has seen most to the anthropogenic impacts on tropical ecosystems.

It is an exciting time for the development of tropical palaeoecology, as demonstrated by the wide geographical and disciplinary spread of the articles in this special issue. A few common themes emerge: What are the contributions from understanding past ecosystem changes to predicted future scenarios of continued deforestation and habitat fragmentation? How best can we develop links between the palaeoecological and climate-modelling communities to the benefit of both disciplines? What is the place of tropical palaeoecology in global-change research? What are the spatial linkages, both inter-hemispheric and inter-tropical (InterTropical Convergence Zone, monsoon systems, etc.), and what can the character of these links tell us about the forcing mechanisms driving ecosystem changes? To what extent are current biogeography and biodiversity patterns a legacy of human disturbance over previous millennia? What can Quaternary palaeoecology teach us about likely tropical ecosystem responses/feedbacks to predicted future climate environmental change?

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