

## Interdisciplinary studies of late Quaternary vegetation and marine dynamics and climate inferences on the Northern coast of Espírito Santo State, Southeastern Brazil

#\*Luiz C R Pessenda[1]; Antonio A Buso Jr[1]; Marcelo C L Cohen[2]; Paulo C F Giannini[3]; Flavio L Lorente[1]; Marlon C Franca[4]; Dilce F Rossetti[5]; Cecilia Volkmer-Ribeiro[1]; Maria I Francisquini[1]; Jolimar A Schiavo[6]; Marcia R Calegari[7]; Jose A Bendassolli[8]; Geovane Siqueira[9]

[1] C14 Lab., Dept. of Nucl. Tech., CENA/Univ. Sao Paulo; [2] Dept. of Geosc., Federal Univ. Para; [3] Dept. Geosc., Univ. Sao Paulo; [4] IFPA, Para, PA; [5] INPE, Sao J.Campos, SP; [6] UEMS, Aquidauana, MS; [7] UNIOESTE, Marechal Rondon, PR; [8] Stable Isotopes Lab., Dept of Nucl. Tech, CENA/Univ. Sao Paulo; [9] Vale Nature Reserve, Linhares, ES

\*: pessenda@cena.usp.br

Interdisciplinary palaeoenvironmental studies in the late Quaternary on the Brazilian coast and, in particular, on the Espírito Santo coast, Southeastern region, are still insufficient to serve as a basis for the reconstruction of the dynamics of vegetation, of relative sea level oscillations and climatic fluctuations and their respective influences on human action in ancient coastal settlement. In order to obtain this information, an interdisciplinary team funded for Sao Paulo Foundation for Research (FAPESP) and National Counsel of Technological and Scientific Development (CNPq) thematic projects, proposed the development of a research in the Atlantic Forest biome at Sooretama and Vale Nature Reserves and nearby regions (Northern Espírito Santo State). In order to characterize the coastal vegetation and marine dynamics with climatic inferences from the late Pleistocene in forest locations and natural fields, it has been used C isotopes ( $^{12}\text{C}$ ,  $^{13}\text{C}$  and  $^{14}\text{C}$ ) of soil/sedimentary organic matter, and palynology in lake and terrestrial sediments. The C isotopes of soil organic matter suggest that the vegetation cover remained with the presence of C3 plants since  $\sim 16,000$  cal BP, in a predominant humid climate. Pollen studies indicate a predominance of forest vegetation in the surroundings of Macuco Lake, located at the Barra Seca River valley, and the presence of taxa with disjunct distribution between Amazon and Atlantic forest since  $\sim 7700$  cal BP. These results permit the inference of the predominance of a regional humid climate between  $\sim 7000$  and  $4000$  cal BP. There was also the influence of relative sea level variation during the Mid and Late Holocene in the Barra Seca valley and in the deltaic plain of the Rio Doce river, with the development of estuary and lagoon, respectively, between  $\sim 7700$  and  $3000$  cal BP and an extensive mangrove vegetation cover between  $\sim 7700$  and  $3300$  cal BP.