

# **QUANTITATIVE ANALYSES OF PALYNOLOGICAL DATA WITH CORRELATION TO DEPOSITIONAL PALEOENVIRONMENTS AND SEQUENCE STRATIGRAPHY, OFFSHORE WEST AFRICA.**

1DEMCHUK, THOMAS D., 2PLATON, EMIL, 1FITZSIMMONS, ROY J., and 1WASZCZAK, RON F.1 Integrated Interpretation Center, Conoco Inc., P.O. Box 2197, Houston, TX 77252-21972 Department of Geology and Geophysics, Louisiana State University, Baton Rouge, LA 70803

Palynological data from offshore West Africa were analyzed quantitatively in order to determine relationships between palynofloral assemblages (pollen and spore taphonomy) and the reservoir/regional scale depositional paleoenvironment. Palynological data consisted of fossil taxa separated into nine distinct ecological groupings based on relationships or resemblance to extant flora. Cluster analyses utilized the presence and/or absence of these ecological groupings within the assemblage. Such analyses were conducted on samples at 30m intervals (10m across high-resolution zones) throughout the section. The objective of this research was to identify processes of palynofloral taphonomy and relate these to the depositional paleoenvironment. Factors such as palynofloral source, climate, hydrodynamic properties of the pollen/spore, systems tract diagnoses, and slope/basin sedimentological interpretations were fundamental premises in determining palynofloral paleodepositional relationships. The majority of palynofloral assemblages through the section were dominated by Gramineae (grass) pollen. This was likely due to predominant lowstand deposition, expansive savanna habitat in the hinterland, and dry climate. Increasing relative abundance of spores, freshwater algae and mangrove represented transgressive and highstand deposition, wetter climates and expansive mangrove and lacustrine habitats in the hinterland. These paleoenvironments were short-lived, or their sediments were poorly preserved in the area of immediate investigation. Dinoflagellates were relatively common in deep water, pelagic paleoenvironments. Smaller size and buoyant pollen/spore increased relatively into deeper waters, except near interpreted channels where assemblages were variable with common larger, robust grains. However, smaller pollen/spore as well as dinoflagellates increased in relative abundance progressively distal from these interpreted channels.